Extra Edition—Annual Market Reviews and Statistical Records—Extra Edition

Oil, Paint and Drug Reporter

The Market Authority Since 1871
Chemicals-Dyestuffs-Drugs-Paints-Oils-Fertilizers

Volume 115: No. 6 Thursday, February 7, 1929 12 Gold St., New York

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Oil, Paint and Drug Reporter

The Market Authority Since 1871
Chemicals-Dyestuffs-Drugs-Paints-Oils-Fertilizers

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Oil, Paint and Drug Reporter

The Market Authority Since 1871
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Prosperity's Unstable Equilibrium in 1928 Leaves 1929 a Puzzle

There was prosperity in the United States—throughout the United States, it may be said—during 1928: prosperity in which the large majority of the people of the country had a share; prosperity which was for the most part individual rather than generally industrial and commercial. Industry and commerce did prosper; but, their prosperity was highly divisional, and that which was more generally shared owed its existence, in large measure, to the support given to the many contributing lines by the few in which outstanding activity prevailed. The condition might aptly be compared with a platform set upon a small number of supports located at its center. Some observers have gone so far as to attribute to it a still less degree of stability and would have one believe that the prosperous condition of the country resembled the dish whirling on the end of a thin rod in the hand of a circus juggler. These observers declare that the condition of prosperity which has obtained owed its existence quite largely to the proportionate share of the automobile business enjoyed by the largest two manufacturing concerns, and that its continuation in 1929 will depend to a great extent on the same single influence.

This is drawing too fine a line; although the influence of the year's activity in the automotive industry was, perhaps, the most potent stimulant of the prosperity which marked the period. Directly, this activity gave support to a number of other industries which supply the raw materials of automobile manufacture. Indirectly—and it was at this point that the changed proportions of the two manufacturers' shares exercised a strong influence—the activity in the automotive industry was largely responsible for the unprecedented volume of stock speculation which added not a little to the prosperity enjoyed by individuals and individual concerns.

At any time during the year, one could hear comment of this sort: "There's Jones: every time I talk to him, he complains that, while he is doing a good volume of business, his margin of profit is almost nothing. But, he has a new car. He is now in Havana. How can be do it?" The answer was that Jones, the individual, was making money even though the Jones firm was not; because Jones was one of the thousands whose operations in securities amounted, in the aggregate, to more than a billion shares of stocks during the year, on the New York exchanges alone.

More than a few business concerns, likewise, added to their profits by joining in the big business done in securities: some in speculation; some in contributing to the loans at very remunerative interest rates. It was a year in which money was most productive and most necessary for prosperity. This fact, coupled with the difficulty of weaker business units to keep supplied with working capital, because of high interest rates, brought about a great many consolidations of concerns engaged in similar or closely related lines of activity. A sort of merger circle (some have called it vicious) was set up. Rumors of negotiations for a consolidation here or there were started. This stimulated speculation in the stocks of the concerns involved. The speculation spread. Stock prices went to new high levels. Interest rates were advanced. Somewhere a concern (not always one in even a related line) was pinched for funds. A competitor was well supplied. And another merger was under negotiation. Out of it all came a greater degree of business stabilization—for the time, at least—for the centralization was quite generally strengthening. It was evident that strengthening was very necessary; for the number of business failures in 1928 was greater than that in any previous year for which a record was kept by R. G. Dun & Co. The aggregate liabilities were not, however, so large as in 1927 or in 1921, 1922, 1923, or 1924. The survival of the smaller business unit is ever becoming more difficult. Because of the legal barriers in this country against rationalization of industry through allocation of production, consolidation seems to offer the only solution.

Whatever the stability of the prosperity of 1928 because of the small number of industries directly contributing to it, its equilibrium was quite well maintained by greater economy and efficiency in operating and by a careful watch on the relations of supply and demand. Over-production was the marked exception. Business activity, on the whole, was a little short of the volume reached in 1927. But, the example of the railroads which earned more money on a smaller volume of freight loadings, was typical of the improvement in operating. That of the petroleum industry in keeping at least one-half of the potential well production shut in was outstanding in indicating restraint.

Agriculture had a measure of prosperity during 1928. This, too, was divisional and sectional. The harvested acreage of major crops was larger than that in the preceding year. Crop yields were generally more prolific. But, as was the case in industry, lower unit prices resulted in a smaller aggregate monetary return for producers. For potato growers and many wheat growers the year was a rather lean one. Their experience led to a widespread reduction of the acreage prepared for the next crop. The farmer has learned much about the efficacy of controlling production. He has realized, also, that the necessity for such action is most often the result of a poorly developed marketing system. Tomatoes, grown thirty miles away in New Jersey or on Long Island, cost as much in New York city as oranges brought three thousand miles from California. New Jersey apples cost, at least, as much as those from the Pacific Northwest. Those who are studying farm relief could find much besides loan schemes to consider if they would look at the farmer's problem in a narrower but closer way. Agriculture is fundamental among the operations of mankind. Its own fundamentals do not seem to be very clearly understood.

It was natural that business conditions with respect to chemicals, oils, and drugs, and the supplies made from these articles for other industries should have reflected the general industrial-commercial situation in 1928. This business is a part of all businesses. The year-end survey of conditions by the Oil, Paint and Drug Reporter gives the following average indexes for the fourteen major market divisions in comparison with those of a year earlier:—

	December 31 1928	December 31 1927
General conditions	103.2	102.2
Sales	104.4	103.7
Prices	103.4	98.8
Opinion as to future	104.7	103.9

The Reporter survey (full details are tabulated on the next three pages) gives

(Continued on page 79)

Year-End Survey of Market Conditions

Summary of Fourteen Major Market Groups

	Compared with same period a year ago — Better	As Good	Not So Good
Sales in last quarter of 1928	55 percent	34 percent	11 percent
Sales in whole year of 1928	56 percent	32 percent	12 percent
Collections at December 31, 1928	15 percent	70 percent	15 percent
Collections over year, 1928	22 percent	68 percent	10 percent
Outlook for business in first quarter of 1929	44 percent	51 percent	5 percent
Outlook for business during 1929	51 percent	45 percent	4 percent
General condition of business	41 percent	50 percent	9 percent

Relative condition, 103.2; relative price, 103.4.

Business Conditions and Outlook, January 1, 1929

Statistical Record Compiled from Data Obtained by the Oil, Paint and Drug Reporter In a Comprehensive Survey of All Divisions of the Major Markets in the Chemical, Dye, Oil, Paint, Drug, and Related Industries, and Presented In Percentages Based on Total Number of Firms in Each Group Which Furnished Requested Information

Industrial Chemicals

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	64%	32%	4%
Sales in whole year, 1928.....	60%	32%	8%
Collections at Dec. 31, 1928....	16%	72%	12%
Collections over year, 1928.....	20%	72%	8%
Outlook for business in first quarter, 1929.....	44%	52%	4%
Outlook for business during 1929	44%	52%	4%
General condition of business..	41%	52%	7%

Relative condition, 103.4; relative price, 97.4.

Miscellaneous Chemicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	50%	50%	..
Sales in whole year, 1928.....	75%	25%	..
Collections at Dec. 31, 1928....	25%	75%	..
Collections over year, 1928.....	25%	75%	..
Outlook for business in first quarter, 1929.....	50%	50%	..
Outlook for business during 1929	25%	75%	..
General condition of business..	42%	58%	..

Fertilizer Materials

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	34%	33%	33%
Sales in whole year, 1928.....	67%	33%	..
Collections at Dec. 31, 1928....	9%	58%	33%
Collections over year, 1928.....	8%	67%	25%
Outlook for business in first quarter, 1929.....	17%	50%	33%
Outlook for business during 1929	17%	50%	33%
General condition of business..	25%	49%	26%

Relative condition, 99.9; relative price, 96.8.

Acids

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	100%	..	..
Sales in whole year, 1928.....	100%	..	..
Collections at Dec. 31, 1928....	..	75%	25%
Collections over year, 1928.....	..	100%	..
Outlook for business in first quarter, 1929.....	50%	50%	..
Outlook for business during 1929	50%	50%	..
General condition of business..	50%	46%	4%

Sodas, Bleach, Ammonia

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	67%	33%	..
Sales in whole year, 1928.....	83%	17%	..
Collections at Dec. 31, 1928....	33%	67%	..
Collections over year, 1928.....	50%	50%	..
Outlook for business in first quarter, 1929.....	50%	50%	..
Outlook for business during 1929	50%	50%	..
General condition of business..	56%	44%	..

Ammoniates

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	33%	67%	..
Sales in whole year, 1928.....	50%	50%	..
Collections at Dec. 31, 1928....	17%	83%	..
Collections over year, 1928.....	17%	83%	..
Outlook for business in first quarter, 1929.....	17%	67%	16%
Outlook for business during 1929	17%	67%	16%
General condition of business..	25%	70%	5%

Arsenicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	60%	40%	..
Sales in whole year, 1928.....	20%	60%	20%
Collections at Dec. 31, 1928....	20%	60%	20%
Collections over year, 1928.....	20%	60%	20%
Outlook for business in first quarter, 1929.....	..	80%	20%
Outlook for business during 1929	20%	60%	20%
General condition of business..	23%	60%	17%

Textile Chemicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	50%	33%	17%
Sales in whole year, 1928.....	33%	50%	17%
Collections at Dec. 31, 1928....	..	83%	17%
Collections over year, 1928.....	..	83%	17%
Outlook for business in first quarter, 1929.....	67%	33%	..
Outlook for business during 1929	67%	33%	..
General condition of business..	36%	53%	11%

Phosphates

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	25%	..	75%
Sales in whole year, 1928.....	75%	25%	..
Collections at Dec. 31, 1928....	..	25%	75%
Collections over year, 1928.....	..	50%	50%
Outlook for business in first quarter, 1929.....	25%	25%	50%
Outlook for business during 1929	25%	25%	50%
General condition of business..	25%	25%	50%

Coaltar Products

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	67%	25%	8%
Sales in whole year, 1928.....	50%	42%	8%
Collections at Dec. 31, 1928....	25%	67%	8%
Collections over year, 1928.....	25%	67%	8%
Outlook for business in first quarter, 1929.....	42%	50%	8%
Outlook for business during 1929	50%	50%	..
General condition of business..	43%	50%	7%

Relative condition, 103.6; relative price, 101.7.

Coaltar Intermediates

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	60%	20%	20%
Sales in whole year, 1928.....	60%	40%	..
Collections at Dec. 31, 1928....	20%	60%	20%
Collections over year, 1928.....	20%	80%	..
Outlook for business in first quarter, 1929.....	40%	40%	20%
Outlook for business during 1929	60%	40%	..
General condition of business..	43%	47%	10%

Potashes

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	50%	..	50%
Sales in whole year, 1928.....	100%	..	..
Collections at Dec. 31, 1928....	..	50%	50%
Collections over year, 1928.....	..	50%	50%
Outlook for business in first quarter, 1929.....	..	50%	50%
Outlook for business during 1929	..	50%	50%
General condition of business..	25%	33%	42%

Coaltar Crudes

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	75%	25%	..
Sales in whole year, 1928.....	..	75%	25%
Collections at Dec. 31, 1928....	25%	75%	..
Collections over year, 1928.....	..	75%	25%
Outlook for business in first quarter, 1929.....	25%	75%	..
Outlook for business during 1929	50%	50%	..
General condition of business..	29%	63%	8%

Coaltar Colors

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	67%	33%	..
Sales in whole year, 1928.....	100%	..	..
Collections at Dec. 31, 1928....	33%	67%	..
Collections over year, 1928.....	67%	33%	..
Outlook for business in first quarter, 1929.....	67%	33%	..
Outlook for business during 1929	33%	67%	..
General condition of business..	61%	39%	..

Cottonseed, Cake, Meal, Oil

All Branches of the Trade

Compared with 1927

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	25%	75%	..
Sales in whole year, 1928.....	50%	25%	25%
Collections at Dec. 31, 1928....	..	100%	..
Collections over year, 1928.....	50%	50%	..
Outlook for business in first quarter, 1929.....	25%	75%	..
Outlook for business during 1929.	100%	..	..
General condition of business..	42%	54%	4%

Relative condition, 103.8; relative price, 108.2.

Paint and Varnish Materials

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	68%	13%	19%
Sales in whole year, 1928.....	65%	16%	19%
Collections at Dec. 31, 1928....	17%	64%	19%
Collections over year, 1928.....	19%	65%	16%
Outlook for business in first quarter, 1929.....	69%	28%	3%
Outlook for business during 1929	67%	33%	..
General condition of business..	51%	36%	13%

Relative condition, 103.8; relative price, 99.2.

Mixed Paints

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	75%	13%	12%
Sales in whole year, 1928.....	50%	25%	25%
Collections at Dec. 31, 1928....	13%	50%	37%
Collections over year, 1928.....	25%	38%	37%
Outlook for business in first quarter, 1929.....	75%	13%	12%
Outlook for business during 1929	75%	25%	..
General condition of business..	52%	27%	21%

Gums, Waxes, Shellac

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	63%	31%	6%
Sales in whole year, 1928.....	69%	12%	19%
Collections at Dec. 31, 1928....	12%	69%	19%
Collections over year, 1928.....	25%	56%	19%
Outlook for business in first quarter, 1929.....	63%	37%	..
Outlook for business during 1929	63%	31%	6%
General condition of business..	49%	39%	12%

Relative condition, 103.7; relative price, 92.6.

Pigments

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	67%	11%	22%
Sales in whole year, 1928.....	78%	11%	11%
Collections at Dec. 31, 1928....	11%	67%	22%
Collections over year, 1928.....	22%	67%	11%
Outlook for business in first quarter, 1929.....	63%	37%	..
Outlook for business during 1929	25%	75%	..
General condition of business..	44%	45%	11%

Lacquer Materials

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....100%		..	..
Sales in whole year, 1928.....	80%	..	20%
Collections at Dec. 31, 1928....	..	80%	20%
Collections over year, 1928.....	..	80%	20%
Outlook for business in first quarter, 1929.....	40%	60%	..
Outlook for business during 1929	60%	40%	..
General condition of business..	47%	43%	10%

Gums

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	50%	50%	..
Sales in whole year, 1928.....	67%	17%	16%
Collections at Dec. 31, 1928....	17%	67%	16%
Collections over year, 1928.....	17%	67%	16%
Outlook for business in first quarter, 1929.....	67%	33%	..
Outlook for business during 1929	50%	50%	..
General condition of business..	45%	47%	8%

Dry Colors

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	55%	18%	27%
Sales in whole year, 1928.....	64%	9%	27%
Collections at Dec. 31, 1928....	27%	64%	9%
Collections over year, 1928.....	18%	73%	9%
Outlook for business in first quarter, 1929.....	82%	18%	..
Outlook for business during 1929	91%	9%	..
General condition of business..	56%	32%	12%

Pyroxylin Lacquers

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	50%	25%	25%
Sales in whole year, 1928.....	50%	50%	..
Collections at Dec. 31, 1928....	33%	67%	..
Collections over year, 1928.....	25%	75%	..
Outlook for business in first quarter, 1929.....	75%	25%	..
Outlook for business during 1929	75%	25%	..
General condition of business..	51%	45%	4%

Waxes

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	86%	..	14%
Sales in whole year, 1928.....	72%	14%	14%
Collections at Dec. 31, 1928....	14%	86%	..
Collections over year, 1928.....	43%	57%	..
Outlook for business in first quarter, 1929.....	57%	43%	..
Outlook for business during 1929	72%	14%	14%
General condition of business..	57%	36%	7%

Shellac

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	33%	67%	..
Sales in whole year, 1928.....	67%	..	33%
Collections at Dec. 31, 1928....	..	33%	67%
Collections over year, 1928.....	..	33%	67%
Outlook for business in first quarter, 1929.....	67%	33%	..
Outlook for business during 1929	67%	33%	..
General condition of business..	39%	33%	28%

Dyestuffs and Tanstuffs

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	56%	33%	11%
Sales in whole year, 1928.....	45%	44%	11%
Collections at Dec. 31, 1928....	13%	50%	37%
Collections over year, 1928.....	11%	67%	22%
Outlook for business in first quarter, 1929.....	45%	44%	11%
Outlook for business during 1929	67%	33%	..
General condition of business..	40%	45%	15%

Relative condition, 102.5; relative price, 94.2.

Petroleum and Derivatives

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	67%	17%	16%
Sales in whole year, 1928.....	92%	8%	..
Collections at Dec. 31, 1928....	42%	42%	16%
Collections over year, 1928.....	42%	58%	..
Outlook for business in first quarter, 1929.....	42%	50%	8%
Outlook for business during 1929	50%	50%	..
General condition of business..	56%	37%	7%

Relative condition, 104.9; relative price, 117.3.

Naval Stores

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	50%	50%	..
Sales in whole year, 1928.....	..	100%	..
Collections at Dec. 31, 1928....	..	100%	..
Collections over year, 1928.....	50%	50%	..
Outlook for business in first quarter, 1929.....	..	100%	..
Outlook for business during 1929	..	100%	..
General condition of business..	17%	83%	..

Relative condition, 101.7; relative price, 100.7.

Dyestuffs and Sizes

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	80%	20%	..
Sales in whole year, 1928.....	60%	20%	20%
Collections at Dec. 31, 1928....	..	75%	25%
Collections over year, 1928.....	..	100%	..
Outlook for business in first quarter, 1929.....	40%	60%	..
Outlook for business during 1929	60%	40%	..
General condition of business..	40%	53%	7%

Crude Petroleum

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....100%		..	..
Sales in whole year, 1928.....100%		..	..
Collections at Dec. 31, 1928....	40%	20%	40%
Collections over year, 1928.....	40%	60%	..
Outlook for business in first quarter, 1929.....	60%	40%	..
Outlook for business during 1929	40%	60%	..
General condition of business..	63%	30%	7%

Flaxseed and Linseed Oil

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	80%	..	20%
Sales in whole year, 1928.....	60%	..	40%
Collections at Dec. 31, 1928....	..	100%	..
Collections over year, 1928.....	20%	80%	..
Outlook for business in first quarter, 1929.....	40%	60%	..
Outlook for business during 1929	..	100%	..
General condition of business..	33%	57%	10%

Relative condition, 102.3; relative price, 108.7.

Tanning Materials

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	25%	50%	25%
Sales in whole year, 1928.....	25%	75%	..
Collections at Dec. 31, 1928....	25%	25%	50%
Collections over year, 1928.....	25%	25%	50%
Outlook for business in first quarter, 1929.....	50%	25%	25%
Outlook for business during 1929	75%	25%	..
General condition of business..	38%	37%	25%

Refinery Products

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928.....	43%	29%	28%
Sales in whole year, 1928.....	86%	14%	..
Collections at Dec. 31, 1928....	43%	57%	..
Collections over year, 1928.....	43%	57%	..
Outlook for business in first quarter, 1929.....	29%	57%	14%
Outlook for business during 1929	57%	43%	..
General condition of business..	50%	43%	7%

Drugs and Fine Chemicals

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	84%	10%	6%
Sales in whole year, 1928	68%	22%	10%
Collections at Dec. 31, 1928	20%	70%	10%
Collections over year, 1928	13%	81%	6%
Outlook for business in first quarter, 1929	77%	23%	..
Outlook for business during 1929	68%	32%	..
General condition of business	55%	40%	5%

Relative condition, 105; relative price, 96.9.

Alcohols

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	100%	..	..
Sales in whole year, 1928	86%	14%	..
Collections at Dec. 31, 1928	17%	83%	..
Collections over year, 1928	14%	86%	..
Outlook for business in first quarter, 1929	57%	43%	..
Outlook for business during 1929	57%	43%	..
General condition of business	55%	45%	..

Alkaloids

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	80%	20%	..
Sales in whole year, 1928	60%	20%	20%
Collections at Dec. 31, 1928	80%	20%	..
Collections over year, 1928	60%	40%	..
Outlook for business in first quarter, 1929	80%	20%	..
Outlook for business during 1929	60%	40%	..
General condition of business	70%	27%	3%

Pharmaceutical Chemicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	90%	10%	..
Sales in whole year, 1928	80%	20%	..
Collections at Dec. 31, 1928	10%	80%	10%
Collections over year, 1928	..	90%	10%
Outlook for business in first quarter, 1929	100%	..	..
Outlook for business during 1929	80%	20%	..
General condition of business	60%	37%	3%

Wood Chemicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	67%	11%	22%
Sales in whole year, 1928	45%	33%	22%
Collections at Dec. 31, 1928	..	78%	22%
Collections over year, 1928	..	89%	11%
Outlook for business in first quarter, 1929	67%	33%	..
Outlook for business during 1929	67%	33%	..
General condition of business	41%	46%	13%

Botanical Drugs

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	13%	87%	..
Sales in whole year, 1928	50%	50%	..
Collections at Dec. 31, 1928	13%	50%	37%
Collections over year, 1928	14%	72%	14%
Outlook for business in first quarter, 1929	38%	62%	..
Outlook for business during 1929	75%	25%	..
General condition of business	34%	58%	8%

Relative condition, 102.6; relative price, 92.2.

Domestic Botanicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	..	100%	..
Sales in whole year, 1928	67%	33%	..
Collections at Dec. 31, 1928	..	33%	67%
Collections over year, 1928	..	50%	50%
Outlook for business in first quarter, 1929	33%	67%	..
Outlook for business during 1929	67%	33%	..
General condition of business	28%	53%	19%

Imported Botanicals

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	20%	80%	..
Sales in whole year, 1928	40%	60%	..
Collections at Dec. 31, 1928	20%	60%	20%
Collections over year, 1928	20%	80%	..
Outlook for business in first quarter, 1929	40%	60%	..
Outlook for business during 1929	80%	20%	..
General condition of business	37%	60%	3%

Essential Oils

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	56%	33%	11%
Sales in whole year, 1928	56%	33%	11%
Collections at Dec. 31, 1928	22%	78%	..
Collections over year, 1928	..	100%	..
Outlook for business in first quarter, 1929	56%	44%	..
Outlook for business during 1929	63%	25%	12%
General condition of business	42%	52%	6%

Relative condition, 103.6; relative price, 142.4.

Domestic Essential Oils

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	60%	20%	20%
Sales in whole year, 1928	60%	20%	20%
Collections at Dec. 31, 1928	40%	60%	..
Collections over year, 1928	..	100%	..
Outlook for business in first quarter, 1929	40%	60%	..
Outlook for business during 1929	40%	40%	20%
General condition of business	40%	50%	10%

Imported Essential Oils

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	50%	50%	..
Sales in whole year, 1928	50%	50%	..
Collections at Dec. 31, 1928	..	100%	..
Collections over year, 1928	..	100%	..
Outlook for business in first quarter, 1929	75%	25%	..
Outlook for business during 1929	100%	..	..
General condition of business	46%	54%	..

Oils, Fats, and Greases

All Branches of the Trade

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	50%	33%	17%
Sales in whole year, 1928	58%	25%	17%
Collections at Dec. 31, 1928	23%	62%	15%
Collections over year, 1928	16%	69%	15%
Outlook for business in first quarter, 1929	54%	38%	8%
Outlook for business during 1929	50%	50%	..
General condition of business	42%	46%	12%

Relative condition, 103; relative price, 98.3.

Animal Oils and Fats

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	75%	..	25%
Sales in whole year, 1928	75%	..	25%
Collections at Dec. 31, 1928	75%	25%	..
Collections over year, 1928	50%	25%	25%
Outlook for business in first quarter, 1929	50%	50%	..
Outlook for business during 1929	75%	25%	..
General condition of business	67%	21%	12%

Fish Oils

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	20%	80%	..
Sales in whole year, 1928	40%	60%	..
Collections at Dec. 31, 1928	..	60%	40%
Collections over year, 1928	..	80%	20%
Outlook for business in first quarter, 1929	80%	..	20%
Outlook for business during 1929	40%	60%	..
General condition of business	30%	57%	13%

Vegetable Oils

Compared with 1927.

	Better.	As good.	Not so good.
Sales in last quarter, 1928	67%	..	33%
Sales in whole year, 1928	67%	..	33%
Collections at Dec. 31, 1928	..	100%	..
Collections over year, 1928	..	100%	..
Outlook for business in first quarter, 1929	25%	75%	..
Outlook for business during 1929	33%	67%	..
General condition of business	32%	57%	11%

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Trade Leaders Discuss Business Conditions

Executives of National Organizations in the Chemical, Dyestuffs, Oil, Paint, Drug, Fertilizer, and Related Industries Give Their Opinions for the Information of Readers of the Reporter

William Butterworth

Deere & Co., Moline, Ill.

President, Chamber of Commerce of the United States

For several years the business of the farm equipment industry has been steadily improving in keeping with the general trend toward more satisfactory conditions on the farm.

In some of those years that trend was modified by unfavorable weather or market conditions affecting considerable areas in some sections of the country; yet, on the whole, demand for modern equipment was such that the industry progressed favorably.

This year, satisfactory farm conditions are widespread. East, West, North and South crops of more than average yield have been harvested. Crop prices have been fairly good. Favorable prices for livestock have been maintained. In general, farmers have a substantial purchasing power which should be reflected in further improvement of business for the farm equipment industry in 1929.

Farmers today are more keenly interested than ever before in labor-saving, cost-reducing farm machinery. Responding to that interest, manufacturers are concentrating more than ever before on the development of such machinery. The up-to-date, handy, efficient tractor, the mechanical corn picker, larger outfits for planting and cultivating corn, the disk tiller for preparing wheatland, and the combine are good examples of that development. In all sections farmers want machinery of greater capacity than the types they have been using—machinery that will enable one man to get more work done and produce crops at lower cost per bushel, bale, or ton. This interest, translated into actual purchases, is such that it amounts to a revolution in farming methods. It promises a new day on the farm—an era of more satisfactory farm profits; and a good, substantial growing business for the farm equipment industry.

William G. Serrill

(United Gas Improvement Company, Philadelphia)

President, American Standards Association

The rapidly increasing use of the standardization and specification technics in almost all branches of American industry, and recognition by industrial management of the importance of these technics in lowering prices and improving products, featured the progress of the industrial standardization movement in the United States last year. Thousands of business organizations, aided by the great technical societies and governmental bodies, co-operated in placing industrial standarization on a sound national basis. Largely in recognition of the broadening scope of the movement, the old American Engineering Standards Committee was reorganized, becoming the American Standards Association.

At the same time the methods of adopting national standards were revised to permit greater flexibility and to facilitate the more rapid formulation and adoption of certain types of industrial standards. Administrative changes also made possible the entrance of a greater range of trade organizations into the direction of the national movement. The most thorough and comprehensive study which has yet been made of the standardization movement was completed last year by the National Industrial Conference Board, and will be published shortly. It is expected that this will be of great value to all American business men concerned with standardization.

The approval by the American Standards Association of nineteen methods of test for petroleum products and lubricants was an important part of the year's national standardization work. Submittal by the United States Department of Commerce of government master specifications for approval as national standards by the American Standards Association, was started a few months ago and promises to be an important aid in making nationally recognized specifications available to manufacturers and others. Projects for the establishment of standard specifications for pressure and vacuum gauges and for leather belting are among other of the most important new national standardization projects started during 1928.

Up to the close of the year nearly 150 industrial standards had been approved as national standards by the American Standards Association. Four hundred bodies, most of them national technical, trade, and governmental organizations, co-operated, through 2,200 representatives, in work on standardization projects, under the auspices of the association. The greater ease of adopting national standards, resulting from the association's reorganization, and the increasing interest in the movement on the part of American business men, gives great promise in this field for the coming year.

August Merz

(Heller & Merz Company, Newark, N. J.)

President, Synthetic Organic Chemical Manufacturers' Association

The year 1928 closed another page of progress in the synthetic organic chemical industry. New products are appearing with frequency. This is particularly true in the recovery of formerly wasted materials in the petroleum and natural gas industry.

In the field of coaltar chemicals and dyes, conditions have been reasonably satisfactory. Any marked improvement in the textile industry will be reflected by a corresponding improvement in business in the dyestuff and chemical field. It is hoped that the domestic textile industry, which has suffered poor business in the recent years, will show a marked improvement for the year we are now entering.

The prospect of a tariff revision may cause all business to hesitate until the new law is enacted. However, with the assurance of protection, given by both parties during the campaign, it may well be that business will go on smoothly.

The growth and development of all industry in the United States is so rapid that it is difficult to conceive of anything but good progress for some time to come.

Ralph E. Dorland

(Dow Chemical Company, New York)

President, Salesmen's Association of the American Chemical Industry

Optimism is the first prerequisite of any successful salesman, and this is especially true as regards those men in the chemical industry who go out into the highways and byways in search of orders which are necessary to insure continuous and profitable operation of the modern chemical plant. The selling branch of the American chemical industry must not be content with the routine procedure of picking up purchase orders from established consumers, but they must be able, as well, to locate and successfully encourage the new prospect who is seeking a favorable opportunity for profitable investment.

Speaking from a general viewpoint of this industry and without special instances in mind, it appears that the year 1928 was particularly prosperous as regards the American chemical producer and the consumer of his products as well. Increased production, as evidenced by increasing contract withdrawals, steady prices except in isolated instances, and collections that were on the average satisfactory, are the factors that have made this deduction possible.

The salesmen in our industry have accepted their particular responsibilities without evasion of any kind and have discharged those responsibilites with credit to themselves, profit to their employers, and satisfaction to their customers.

Looking ahead into 1929 and taking into consideration these facts:—That renewal contracts were negotiated much earlier than usual; that the new year's requirements of raw materials show an increase over last year; that producers and consumers of chemical products look forward with confidence to the future; that over-production is gradually being eliminated by a scientific survey of legitimate consumption —it is fair to assume that the present year has every opportunity of becoming one of the epochal periods in our industry.

Ernest T. Trigg

(John Lucas & Co., Philadelphia)

President Agricultural Insecticide and Fungicide Manufacturers' Association

There is not much that I can say about the prospects for 1929, except that there is a tremendous potential market for the products of the insecticide and fungicide industry, and it only remains for a proper education of the public to the importance of frequent and thorough use of these materials to realize on the market that does exist.

The price situation continues to be a detriment to a proper interest and development of the industry on the part of the manufacturers. The business is a very seasonal and uncertain one. Weather conditions and similar factors, while crops are growing, have a great deal to do with the volume of business, and this, of course, cannot be anticipated.

H. W. Hamilton

(White Tar Company of New Jersey, Kearny, N. J.)

President, Insecticide and Disinfectant Manufacturers Association

The year of 1928 was one of general prosperity among the manufacturers of household insecticides and disinfectants. These products are being manufactured in ever-increasing quantities. All facts point to this; although no authentic statistics are available for quantities or values of the finished products. The large volume of raw materials consumed in the manufacture of household insecticides and disinfectants indicates very closely, however, that the volume of the manufactured goods has greatly increased. It is reasonable to assume that these increases will continue along normal lines. Export business has been about the average.

Prices in 1928 were not properly maintained in the case of many products. Increased volume compensated for this to some extent; although it is doubtful if the increased volume was sufficient to make up for the lowered prices in certain instances. The present year should witness no further reductions in prices of standard and reliable insecticides and disinfectants. It is entirely possible that quotations will be made at higher levels than those now generally maintained. The opening of 1929 indicated a greater strength in the position of this industry as a whole than ever before, and the prospects are encouraging.

The annual convention of the Insecticide and Disinfectant Manufacturers Association was held in New York in December, and the attendance was the largest ever on record. There was more accomplished, and indications were that the coming year would be a successful one.

Paul J. Kruesi

(Southern Ferro Alloys Company, Chattanooga, Tenn.)

President, American Electrochemical Society

The industrial and commercial outlook was never better than it now appears for 1929. Somehow the election of 1928 did not have the quieting effect on business that has previously characterized presidential campaigns, with the result that business remained fair to good throughout the second half. But the actual outcome of the campaign, resulting in the election of a business man and engineer, has had a quickening effect such as has not heretofore been experienced in a corresponding period of time.

It is my observation that the business mind of the nation is extraordinarily well pleased with the prospects —it looks forward to an era of tremendous expansion of American trade abroad and of great progress at home.

E. H. Killheffer

(Newport Chemical Works, Passaic, N. J.)

President, American Association of Textile Chemists and Colorists

It is not a simple thing to correlate the "industrial and commercial" aspects of a business year with the activities of an organization which is purely technical. However, there are one or two conclusions that might be drawn; business trends are perhaps reflected in the state of affairs of any association.

Last year we added very greatly to our membership; probably more members joined than in any other single year. This is of itself an indication of a healthy condition in the industry. The interest that a man has in his job, his will to improve himself for it and to broaden his knowledge in it, is always strengthened or weakened by his business prospects.

We can also see in the quality of our papers and in the trend of our discussions the awakening to a realization of the necessity of knowledge that is right up to the minute. The day of doing a thing the way it always has been done is very much in the past. We may look upon the condition of our organization, therefore, as a direct reflection of the active improvement of methods and products which is taking place throughout the textile industry.

In this connection I might mention the widespread recognition of the need that the textile industry has for pure fundamental research. This recognition has become, and is becoming more and more, obvious in all the proceedings of our association. An industry ready for research is an industry which has progressed far, and when an association like ours is given the impetus that it has been given to establish a full-fledged research bureau one can rightly conclude that the industry supplying that impetus is in full speed ahead.

The growing popular cry for better and faster fabrics is heard nowhere more clearly than at our meetings. It plainly shows in what direction textile production is tending. The work of our research committee, particularly the findings of the subcommittee on light fastness and the development of the laundrometer which will give us definite gauges for fastness, is something of vital importance in this connection. When there is more definite popular knowledge of what fastness is; when the public can know how much fastness it is buying at a time, then, because of the feeling of security, will buying increase—and of course greater demand is a synonym for greater prosperity. The activities of our association indicate that this is what we may expect.

E. B. Reeser

(Barnsdall Corporation, New York)

President, American Petroleum Institute

Generally speaking, considerable improvement was made in the petroleum industry during 1928 over the previous year. Stocks of refined products were reduced, while fuel and bunker oils were increased. The consumption of the lighter oils continues to increase at a tremendous rate. The completion of new mileage to the hard-surfaced highways throughout the entire United States and the demand for house-heating oils has reduced the difference between the peak and valley of demand. The year 1929 will require nearly a billion barrels of petroleum products in the United States.

The potential production from proven areas in the United States is estimated at twice the volume being produced.

Voluntary co-operation assisted by State laws has helped to maintain fair prices.

The prosperity of the industry in 1929 will be in proportion to the willingness of the leaders to co-operate in balancing production and consumption.

J. P. D. Hull

(Tulsa, Okla.)

Business Manager, American Association of Petroleum Geologists

During 1928 the continued oversupply of petroleum, both above and below ground, was not at all conducive to increased activities in exploratory work. In general, therefore, there has been little demand for new geological service in extending old fields or developing new territory; some observers might even feel that over-production of crude and the large supply in sight have caused geologists to lose work and clients. As a rule, however, producers maintain their geological de-

partments as necessary units for the efficient operation of the whole organization.

Although there has been no immediate need for the discovery of more oil territory, there has been an increasing need for expert and sound advice in regard to new scientific methods in the location of natural reservoirs and in more effective recovery of oil. More than ever, speedier and more expensive exploratory methods have been used. Structure mapping by means of airplane, seismograph, torsion balance, and magnetometer has created a real demand for more expert geological advice in the interpretation of these new and somewhat experimental methods of oil-finding. The activities of the geologist during 1928 have continued to become e specialized along certain lines, but the demand for broad and comprehensive geological advice is greater than ever.

The outlook for 1929 is that the geologist will hold an increasingly responsible position, not only because of his specialized knowledge in stratigraphy, paleontology, and petrography, but more than ever because of more comprehensive experience in the application of new devices to the practical needs of exploration and even drilling and production.

Judged by the activity and growth of the American Association of Petroleum Geologists which is the largest organized body of geologists in the world and which is the industry's organized authority in petroleum geology, the industrial-commercial aspects of 1928 were quite encouraging for greater and more practical need for geological services, not necessarily a demand for more geologists, but an increasing demand for geological knowledge variously applied.

E. H. Hilpp

(Kentucky Consumers Oil Company, Louisville)

President, Independent Oil Men of America

During 1928, beginning the latter part of February, refinery base prices began rapid ascension, which continued until late in August and worked a serious situation for our membership. These advances would not have materially affected the situation except that wholesale tankwagon price structures did not quickly respond to refinery advances.

Also, over practically the entire country, wholesale tankwagon price structures were such that contract margins were, in many cases, seriously affected. This situation resulted in material losses to a large part of our membership, and, in some cases, resulted in serious loss for the year. However, as a general proposition, the situation was fairly satisfactory.

Our membership is looking forward with confidence to business over 1929. It is not optimistic as far as motor fuels are concerned, by reason of the fact that they fear a repetition of 1928, otherwise, however, a feeling of security is evidenced that only the most drastic situation will dissipate, which is not anticipated.

The membership of the Independent Oil Men of America is very much divided, in opinion, on the marketing code recently adopted by the American Petroleum Institute. A large part of the membership contend that only the law of supply and demand should regulate a situation which may only be aggravated by an effort to compel a situation arbitrarily. There is only a small part of the membership in favor of accepting the code as adopted. This matter is creating a great deal of concern, probably more than any particular thing that confronts the situation at this time.

R. J. Alexander

(Oil City, Pa.)

Secretary, Pennsylvania Grade Crude Oil Association

Unquestionably in our opinion the Pennsylvania oil-producing industry is in a pretty satisfactory, firm position as compared to years earlier. The refiner of Pennsylvania grade crude oil, given a little better price for gasoline than that now prevailing—for instance, such a price as did prevail during most of the summer months in 1928—would also, we believe, acknowledge that his position was a healthy one.

It is not at all uncommon these days for journalistic and editorial authorities to express the idea that, whereas, in earlier years, the posted market price for Pennsylvania grade crude oil was more or less a criterion or barometer portending changes in the Midcontinent prices, or vice versa, Pennsylvania grade crude oil is now looked upon as being more or less in a class by itself, there having been at least six advances in the price of our crude since there was any general advance in the price of Midcontinent crudes. It being one of our primary objectives to stabilize conditions in the Pennsylvania oil industry, this office feels that such an objective has been accomplished to a marked and desirable degree, and barring any unusual developments that might upset the situation prevailing now throughout our industry generally, it seems reasonable to assume that 1929 may be a satisfactory year for the Pennsylvania grade oil industry.

It is a major effort of the association to prevent sale of other products as Pennsylvania oils. Lack of funds has handicapped this effort. We have, however, succeeded at last in putting into effect a plan which we believe is workable, and which will provide quite definite assurances that any oil furnished by our members to anyone, under the association emblem, will in truth be made exclusively from our crude. Through co-operative sales promotion, which has the hearty endorsement of our membership, we hope for a gratifying future of the Pennsylvania oil industry.

W. N. Davis

(Tulsa, Okla.)

President, Mid-Continent Oil & Gas Association

The oil industry, like agriculture, continues to struggle with the problem of over-production. Eventually, this essential and irreplaceable natural resource will be reduced to a point insufficient to the country's needs; but certainly, no shortage is now in sight. On the contrary, the application of scientific methods to the discovery of oil has made certain, not only an adequate, but an excessive, supply of the raw material so long as important potential areas in the United States remain unexplored and undeveloped. Thus, the stability and prosperity of the industry are dependent on control of production which will keep the surplus in the ground until needed.

Through co-operative effort a limited measure of such control was attained in 1928, but stocks above ground still showed a large increase, and the average price of crude was not remunerative. Similar, but more successful, efforts to control refinery output gave that branch of the industry a fairly profitable year.

Prosperity of the industry in 1929 will depend upon increased control of crude production and refinery output. An excess of both crude oil and refining capacity will be available. Productive areas should be developed in an orderly and economic fashion, thus effecting an enormous reduction in costs and keeping the surplus oil in nature's storage instead of adding it to already excessive stocks, with the accompanying threat of lower prices. Refinery operations should be adjusted to the demand for refined products, and the crude production to the refinery operations. Such a program would create almost unbelievable economies in the industry, assuring, not only its prosperity, but ultimate benefits to the consuming public.

The peculiar circumstances attached to oil production are such that a pool once opened cannot be shut in or regulated if even a single operator refuses to co-operate; because the pool is a common reservoir and those who fail to drill and produce will lose their oil and gas to those who do. Unanimous agreement is always difficult and usually impossible to attain.

Therefore, a majority of the leaders of the industry have reluctantly concurred in the conclusion set forth in the report of the Federal Oil Conservation Board, to President Coolidge, that State legislation is needed. Model bills have been drafted by a committee of the American Bar Association, in co-operation with representatives of the industry, intended to create the authority which may be invoked to compel co-operation in a pool to bring about economic development and orderly production adjusted to the demand. There is opposition to such legislation, chiefly from the small producers and royalty owners who, without full information, have failed to thoroughly analyze the situation and do not appreciate its exigencies, or from those who cannot overcome their fundamental prejudice against government in business.

Whether or not there will be legislation in the oil-producer States this year, it is encouraging to know that the industry as a whole is rapidly coming to realize that its prosperity can no longer safely depend upon failure to find oil in excessive quantities. With full appreciation of the unsound economic situation will come some kind of constructive action to correct it.

Henry W. Caragol

(Caragol, Young Company, New York)

President, Olive Oil Association of America

One of the trade associations in the food field which has had conspicuous activity in the last few years is the Olive Oil Association of America. Originally organized in 1921 as the American Olive Oil Importers' Association for the purpose of furthering the interests of those who bring olive oil to this country from abroad before Congress which at that time was considering an increase in the duty under the emergency act of 1921, the organization has, more recently, under its present name, found a great need for extending its field of usefulness.

With the prevailing higher prices of olive oil during late years, a widespread practice of adulterating brands of oil by unscrupulous packers became very profitable, and this necessitated the utmost vigilance on the part of the association to break it up. For two years and more, constant campaigns, with the assistance of the Federal, State and city authorities, to prosecute these packers have been waged, and this has resulted in stopping much of the fraud.

Participating in a trade practice conference under the auspices of the Federal Trade Commission over a year ago, the association brought about the fixing of the standard weight of a gallon of olive oil on a basis separate from that of all other edible oils, establishing 7.61 pounds as the basis. The association also induced the commission to approve a rule of ethics which makes it necessary for packers of edible oils to cease placing labels on their containers depicting words, symbols, and other matter which would lead a purchaser into believing he is buying olive oil when, as a matter of fact, he is buying an inferior substitute. Again, with this authority of the governmental commission behind it, the association has had its work cut out for it in bringing the attention of the commission to those cases where such misrepresentation has continued.

Threatened with further increase in the duty on olive oil, which the association claims is already too high, the members recently sent a committee to Washington to appear before the Ways and Means Committee of the House of Representatives to enter its protest and ask for a reduction in the duty which would place olive oil on the basis it was before 1921.

The year 1928 was a most difficult one for those engaged in the olive oil industry. The enormous crop of 1927-28 in Spain caused prices to decline to such low levels that, while some buyers took advantage of them, the majority feared that prices would continue to decline, or in any cases lower prices would prevail for the greater part of the year 1928. Notwithstanding the abundant supply of olive oil, prices began to climb, due to the support received by the farmers and holders from Spanish banks through government intervention in order to prevent a crisis.

The great trend of the market throughout the year has been upward, and many buyers were forced to cover their requirements at prices much higher than they had anticipated. Toward the latter part of the year, new crop predictions for the 1928-29 crop were very pessimistic, and it was said that, in view of the enormous crop the previous year, trees were impoverished, and this combined with the "oruga" (a worm affliction to the fruit) caused alarm. Prices continued to advance, and notwithstanding the fact that now that the new crop has been harvested it amounts to just about the same quantity which was exported during 1928 and leaving abundant supplies in Spain, prices have not gone down and are today about 30 percent higher than they were a year ago.

Crops in Italy, Algiers, Tunis, and Greece for 1928-29 were reported as good, and those countries are offering oils at lower prices than Spain in spite of the large stock which is said to be held in that country. Buyers seem to feel that a very cautious policy should be followed in making purchases for 1929; as, should the Spanish market begin to decline, the levels of the beginning of 1928 might easily be possible.

Reports from Spain are to the effect that olive oil continues in strong hands and that there will be no decline, but a firm market very well controlled will be the case. It is reported that Spain awaits the time when cheap oils offered from Italy, Algiers, Tunis, and Greece have been exhausted, and once again buyers will have to turn to Spain for their requirements.

The general consumption of olive oil in the United States continues to grow and in fact, the world consumption of this most valuable edible and medicinal oil grows yearly. The same may be said of commercial olive oil and olive oil foots (sulphur oil). These latters oils are used in very large quantities for soapmaking. This consumption continues to increase.

While the Olive Oil Association of America is composed of a majority of the largest importers and packers of olive oil in the United States, the membership committee proposes to increase the membership and establish eventually subdivisions in the principal cities of the United States. Already work along these lines is being done in Boston and also on the Pacific coast, in Los Angeles.

H. Mart Smith

(W. R. Grace & Co., New York)

President, Oriental Oils Association

From the viewpoint of those engaged in the importing and dealing in chinawood oil, the year just closed left much to be desired. While the volume of imports exceeded those of any previous year, the margin of profits for the firms engaged in this more or less hazardous business was unsatisfactory on the whole.

The primary market has been clouded throughout the year with uncertainties. First, we had to contend with a newly established national government, none too stable at best; throughout the year threats of further political outbreaks were frequent. These, coupled with almost continual piratical raids on the upper Yangtse river, made the movement of oil quite uncertain, and the cost of doing it equally so. Merchants and shippers in China have suffered more than usual from the exaction of militarists on the one hand and pirates on the other; so that no one was quite sure of the cost of his merchandise, and there were many times when it was doubtful if merchandise purchased would come through at all.

At the close of the year, the newest disturbing factor was the promise of an increased export tax which, at this writing, is scheduled to go into effect on January 26, and will amount to an additional impost of ¾c. per pound USG.

That the business has become extremely hazardous is testified to by the fact that not less than a half-dozen well-entrenched firms, who were doing business in China for more than twenty years, have discontinued, entirely, trading in chinawood oil. This business has now passed into the hands of either Chinese exporters or more venturesome spirits who have been bold enough to venture into a field already abandoned by more experienced people.

Notwithstanding all of the difficulties, the volume of 1928 was greater than any preceding year, and the price fluctuation was relatively narrow.

The latest difficulty to confront the trade is the proposed new tariff measure. On the 8th of this month, seven different farm organizations, through their paid lobbyist, appeared before the House Ways and Means Committee and asked that all vegetable oils and oleaginous materials be made dutiable at the rate of 45 percent ad valorem.

These gentlemen probably don't know much about wood oil, nor do all the individual members of the committee. But, politicians and patriots alike are clamoring for a chance to do something for the farmer, and in this particular instance they are very apt to give him a duty on chinawood, oil (which can not help the farmer) simply because he asked for it.

The varnish manufacturers apparently have done very little to combat this request of the farm organizations lobby. Perhaps they do not realize that 45 percent ad valorem will add 6c. to 7c. per pound to the price for wood oil. The importers can do very little to stop this foolish measure as their voice carries little weight with Congress. But, the varnish manufacturers, individually or as an association, will be listened to respectfully. It behooves them to get their story before the house committee during the hearings to be held February 20, 21, 22.

There is nothing to indicate that chinawood oil will be cheap this year; in fact, almost everything points to a higher average price than last year due to the increased costs of handling in China together with increased taxes.

P. D. Buckminster

(Martin Varnish Company, Chicago)

President, Federation of Paint and Varnish Production Clubs

Those who are inclined to comment on future conditions speak favorably for the first six months of 1929, but hesitate to predict that our present prosperity will continue during the entire year. Although the general conditions throughout the country are thoroughly sound, it is evident that those industries and trades which supply the luxuries are enjoying the most evident prosperity; while the necessities, such as the textiles, shoes, lumber, and so on, are still very much depressed. However, when general business conditions are as prosperous as at present, an industry such as ours, which is closely allied with general business, is in a most encouraging position. But the greatest encouragement for a progressive and profitable year in the paint and varnish industry comes from within the industry itself.

Increased business with real profits can come only through production efficiency, and the production club movement guarantees that in the paint and varnish industry. It is slowly but constantly developing a sound co-ordination between technical development, operating efficiency, and sales promotion. This natural desire on the part

of the production men to organize in their efforts to develop new and better products, more efficient methods of manufacture and of cost control, as well as to promote a more intimate contact between manufacturing and sales assures a normal healthy growth of the industry and a profitable year for those who capitalize on the work of our two national associations and of the Federation of Paint and Varnish Production Clubs.

By the efficient production and promotion of more attractive paint and varnish products we may easily enjoy the benefits of a proportional part of that popular demand now arising for some of the so-called "luxuries," and thus share in the prosperity of these more favored industries.

E. P. Lynch

(Starkweather & Williams, Inc., Providence, R. I.)

President, National Association of Paint Distributors

I would list the outstanding projects of the paint industry in 1928 as follows:—

First—Determination on the part of the members of the industry to insist upon higher ethical standards and to eliminate unfair and illegal practices.

Second—The broad educational program proposed through the sales training course and fostered by the Save-the-Surface Campaign.

Third—The research program being carried on by the Department of Commerce in the matter of wholesale paint distribution.

Perhaps, because of his special interest in distribution, the writer emphasizes this last item more than others would.

People in the industry will recall that during the years 1926 and 1927 the Harvard Bureau of Business Research analyzed the costs of the distribution of paint. From this analysis we got certain general figures which were of great value.

The work of the Department of Commerce ties in admirably with what has been done by the Harvard bureau, since it proposes to break down the various functions in greater detail and establish facts relative to his organization not heretofore available to the distributor. It will also furnish formulas to enable the distributor to find the new facts about his own organization.

The effect of such research as has been carried on is not immediately noticeable. It is like the invention of a new machine which radically changes methods of manufacture—its merits recognized by very few at first, but the results of its use forcing its eventual adoption by the industry as a whole.

So with statistics and facts discovered about the distribution of paint. Gradually people will learn the significance of the facts and how to use them to advantage. Eventually, through economic pressure, the application of methods indicated by such new information becomes general.

The members of the faculty of the Harvard Bureau of Business Research selected the typical paint distributor whose business is being analyzed by the Department of Commerce. It is expected that one of the sessions of the convention of the National Association of Paint Distributors, to be held in Chicago in February, will be devoted to the report of the department.

We hear of nothing in our branch of the industry which indicates any unusual trends during the past year. It might perhaps be said that the almost revolutionary effect of the use of lacquer in the industry has prepared people for the acceptance of new products developed in the laboratories of our manufacturers—a readier acceptance of new materials, in other words.

Some men who complain of doing less business in 1928 than in 1927 suggest the possibility that a great number of people, who might have spent their surplus funds in improvements which would affect the paint business, have had those surplus funds tied up in market speculations. It is probably true that more people have been speculating in the stock market this year than ever before, and perhaps the market has made a stronger bid for the consumers' dollar than has the desire for paint.

Generally speaking, paint distributors are giving serious thought to the question of economic territory and merchandise duplication, two items which, if not intelligently handled, seriously affect the cost of doing business. Reports from various sections of the country indicate that our members are reasonably confident of good business for 1929.

Felix E. Wormser

(New York, N. Y.)

Secretary-Treasurer, Lead Industries Association

The lead market in 1928 was noteworthy for the unusually slight price fluctuations recorded throughout he year. As a matter of fact, the New York market began where it ended, with lead at 6½ cents per pound, and the average price of the year was 6.31 cents. This condition of stability was, doubtless, highly appreciated by consumers, who are often seriously affected by sudden changes in the lead market.

For the first time in several years the world production of lead showed a declining tendency, and although the decline was slight, it was brought about by the inability of some producers in the United States and other lead-producing countries to make a profit at prices prevailing in 1928. They, therefore, curtailed production or abandoned operations entirely. Production of lead in the United States is estimated to have been 645,000 tons in 1928, compared with 673,000 tons in 1927. There were a few countries, notably Canada, Burma, and Germany, where production of lead was record-breaking last year.

The consumption of lead in its main outlets was generally good in 1928, and if certain tendencies now apparent become effective in 1929, there should be a larger use of this indispensable metal in the coming twelve months. The outlook for the consumption of lead in storage batteries and lead-covered cables is bright. Both of these great industries use large and, strangly enough, almost equal amounts of lead, each about 180,000 tons annually. In the case of storage batteries the outlet hinges upon developments in the automobile field, which are admittedly satisfactory so far as volume of production is concerned. In fact, all signs point to a record production of automobiles in the United States during 1929.

The consumption of lead for lead-covered cables should be greater in 1929 than in 1928. Lead gives such excellent protection to cables from storm and corrosion that it is indispensable when telephone or power companies wish to insure uninterrupted use of their facilities by protecting their lines from physically disturbing factors.

Not far behind the use of lead in cables and storage batteries is the consumption of lead in the manufacture of pigments, white lead, sublimed lead, and lead oxides. Although white lead is a paint pigment without a peer, it suffers keenly from competition by inferior materials. The paint buyer unfortunately has not been educated to look at his painting problem from the standpoint of durability and service rather than the cost of his painting material. Sales in the early part of 1928 did not quite come up to expectations, but white lead manufacturers in general are looking to 1929 with much confidence, and, provided unseasonable rainy weather in the spring and early summer does not take place, the outlook for an increased white lead consumption is good.

In the lead oxide trade the manufacture of storage batteries furnishes one of the major outlets for those materials. Here, again, the outlook is good. Metallic lead products have shown a mixed trend in recent years. One important factor in the lead situation is the growing production of secondary lead which competes with virgin lead in many uses.

On the whole, all branches of the lead industries, from miners to manufacturers, are looking at the future with every expectation of prosperity.

E. H. Patterson

(G. W. S. Patterson & Co., New York, N. Y.)

President, American Gum Importers' Association

The volume of trade in varnish gums during 1928 is said to have been tolerably satisfactory, particularly during the last half of the year.

As to the outlook for 1929, it is my opinion that the various members of the American Gum Importers' Association are looking forward with increased confidence to the present year, with the feeling that trade generally is likely to show an improvement over 1928 in the volume of business that will be done. There seems to be every justification for this display of confidence in the future, in that the carry-over of merchandise from the inventory period was moderate; the prices of the various varnish gums in the American markets are reasonable, and the trend in the primary markets is toward steadiness, with stocks nominal and little if any pressure to sell.

Rudolph Zinsser

(William Zinsser & Co., New York)

President, American Bleached Shellac Manufacturers' Association

The year 1928 should be a "red letter" one for our industry, as it marks the most important step which our enlarged association has ever undertaken. A code of ethics has been most carefully worked out and an ambitious program enthustically adopted, aimed to strike vigorously and completely at all the evils and abuses of the shellac industry, including the adulteration of shellac and the diversion of alcohol into illegal channels.

Such a step requires courage, patience and mutual trust. Skeptics will shake their heads and say it can't be done. Certain buyers, by direct or inferential misrepresentation and perhaps even falsifying, will try to make all such attempts futile and inoperative. Fortunately, however, the great majority of business men, many from personal experience, realize that every industry suffering from overproduction and injudicious scrambling to obtain tonnage must set its own house in order or else go to pieces. Profitless prosperity in all industries has become only too common. To ignore the inexorable consequences of permitting this state of affairs to continue shows only a lack of ability, intelligence and initiative.

The adoption of the code of ethics has proved to be of interest, not only to those in the shellac and closely related fields, but has attracted the attention and praise of many diversified industries, proving that our shellac industry was in no different situation than hundreds of others.

The years of 1927 and 1928 were unusually difficult and trying ones for the shellac bleachers and shellac cutters in the United States, who, even during their best years, have difficulty in obtaining an adequate return on their investment.

So much for the past. The future looks far more encouraging and rosy. The industry is on a more economically sound basis than ever, with intelligent cost accounting and knowledge of overhead the order of the day.

The furniture industry and other lines upon whose welfare the shellac industry depends all seems to be expecting 1929 to be excellent, and a definite feeling of optimism and faith prevails on all sides, which is quite different from the feeling at this same time last year. The shellac industry expects to get its full share of the prosperity of 1929.

J. S. Herkness

(Charles Eneu Johnson & Co., Philadelphia)

President, National Association of Printing Ink Makers

I feel that the year 1929 will be a profitable one, not only for the printing ink manufacturers, but for all industries.

Prosperity depends largely upon the state of mind and confidence as to the immediate future. Practically all basic conditions for such confidence exist today. We have elected a man as President who has consistently lent a sympathetic ear to every constructive trade suggestion and has himself saved industry millions of dollars through the elimination of waste and duplication of efforts. The relations between capital and labor are more harmonious than ever before. We have a banking system that is elastic. Improvement of the Mississippi River will provide employment and aid the general welfare. Mr. Hoover has suggested a three-billion-dollar construction reserve for the nation, which, if established, will further tend to stabilize our economic system and reduce unemployment. The only drawback is the present tendency toward excessive speculation, but I believe our Federal Reserve System will control that. So much for the general situation.

As far as our particular industry is concerned, the various manufacturers are realizing more and more the necessity for the elimination of waste, the standardization of cost keeping and terms, and other general co-operative features. Constructive action is becoming more and more evident, and when the year has rolled around I believe that all of us will have found that our profits were better and the industry in sounder condition than at the end of 1928.

C. F. Speh

(Jacksonville, Fla.)

Secretary and Manager, Pine Institute of America.

The naval stores season, which will close March 31, 1929, has proved to be very unsatisfactory from many points of view. There has been no decrease in cost of production, chiefly due to the low yield of product per crop. This low yield is due to the unfavorable weather conditions.

We had a late, cold spring, with frequent heavy rains throughout the season, in many places creating floods. We have had several severe wind storms, some of which were local, but several fairly general in character. Considerable timber was blown down, but the big loss in yield came from loss of gum from the rains, and also the fact that under this flooded condition the woods could not be worked.

This condition has created approximately 18 percent reduction in the production, as compared to last season. Had we had favorable weather, undoubtedly the crop would have been fully as great as last year.

The prices have been low. In fact, it seems to be the general opinion that the prices netted the producer were below the cost of production. In most cases, the operating expense was met, but the income was not sufficient to take care of timber lease, interest, and depreciation.

It is, of course, too early to state definitely regarding the crop of next year. The producers are uncertain regarding their crops. Considerable difficulty will undoubtedly be experienced in financing any new installations.

World consumption has been approximately equal to world production. Statistically, the positions of both rosin and turpentine are strong.

The industry is, it is believed, gradually recognizing that its main problem lies in financing and developing markets. It is recognized that any effort to artificially regulate production is doomed to fail. The industry is rapidly admitting that, with slightest encouragement, we can create a prosperous, permanent naval stores industry, thereby assuring the consumers of rosin and turpentine of a continued adequate supply.

The 1929 season will see continued effort to reduce cost of production by increased efficiency in woods operation. These changes should mean an increased yield in crop and more nearly standard products.

W. L. Monro

(American Window Glass Company, Pittsburgh)

President, Window Glass Manufacturers' Association

It is the general belief that there will be a reasonably active demand for window glass during 1929. The momentum gathered from the 1928 building operations will continue to some extent in 1929.

Our industry depends upon the activity in the building business, as most of our product is consumed in new structures.

From what reports we can gather, there will be an active building program this year. Moreover, if the industry will be afforded relief in the form of increased tariff rates, it will lessen imports and enable the domestic factories to operate to a greater degree and keep their men more fully employed.

Charles G. Merrell

(William S. Merrell Company, Cincinnati)

President, American Drug Manufacturers' Association

From the standpoint of the pharmaceutical manufacturer, the year 1928 was very satisfactory, and the outlook for 1929, so far as we can see into the future, is equally good. Competition will undoubtedly continue keen, but this only stimulates to greater efficiency in sales and advertising, while at the same time maintaining the advances that have been made in the past years in the matter of production. Production costs, in spite of higher wages, have gone down through greater efficiency, and it is believed that distribution costs can also be cut in the same way.

Changing conditions in the trade have affected almost everyone in this industry to some extent, and have increased interest in specialty lines, which are not so directly affected by present day conditions as the older competitive goods which in years gone by formed the bulk of business done by pharmaceutical manufacturers.

R. Lincoln McNeil

(Robert McNeil, Philadelphia)

President, American Pharmaceutical Manufacturers' Association

Nineteen hundred twenty-eight was a prosperous year in the pharmaceutical field, and the industry as a whole looks forward with confidence that the new year will be equally satisfactory. The assurance that the incoming administration will be in harmony with President Coolidge's policy and the fact that the President-elect by ability and experience is well equipped to handle the affairs of the nation tend to create confidence in business and stability in markets generally.

The economic changes taking place in the distribution of pharmaceuticals will be successful or not, depending on quality production and increased service to the customer. The laboratories not embraced by mergers either tentative or those already established are more and more becoming specialized in certain lines of pharmaceutical manufacture. By the extension of research work, these plants are producing quality products that are without an equal in the world's markets. This perfection of production coupled with service will enable any individual lab-

oratory, if it chooses to do so, to outride the sea of mergers.

Viewed from every angle, the industry looks forward with confidence that 1929 will be a good year for business as well as one full of interest.

J. H. Marshall

(Northwestern Drug Company, Minneapolis)

President, Federal Wholesale Druggists' Association

I have been in touch with many members of the drug fraternity, both wholesale and retail, in various parts of the country during the past few weeks. The response to the question repeated so frequently, "What are we to expect this coming year in the business world?" has been almost invariably an optimistic one, but hesitatingly given, with a question mark following.

My impression is that, as a general rule, it is quite agreed that business conditions are good, that consumer demand for merchandise of every type will be somewhat above the average or normal. Farm crops in 1928 were generally good and brought at least fair prices. There were lean spots, but we find them somewhere, every year. Factories generally are working with full crews. The banks have plenty of money; savings banks are showing larger surpluses than ever before. Every offering of attractive stocks and bonds is snatched up eagerly—and yet that question mark.

That there is unrest and uncertainty is quite evident, and it pervades all lines of merchandise activities; dry goods, groceries, hardware, clothing and drugs are on the anxious seat. Further questions bring to the surface that the problem of distribution is the big thing at the bottom, that occasions the question mark. The lines of distribution have been fairly well marked for a good many years. It has been observed many times in recent years that our methods need remodelling as in many particulars they are ancient, obsolete.

Changes are coming, and rapidly. Chain stores of various kinds are being financed as rapidly as competent man power can be developed. Mergers of big business houses have taken place. Announcements come at frequent intervals that additional retail stores, numbering a thousand or more under one management, are in process of development.

What does it all mean and where and when will the answer come? The independent retailer fears the coming of the chain; as it means a still deeper cut into his profits, already small. The wholesaler does not welcome the coming of the chain; for in its formation it absorbs many independents and lessens the demand on the middleman, as the chain needs are largely supplied by the manufacturer direct. Department store mergers also cut into the business of the wholesaler; factories are delivering in many instances their entire output to one purchaser.

There is a silver lining, however: These are simply changes of distribution. The consumer will fare well by reason of them, and many a retailer is learning many good lessons and is improving his business methods and this tends to improve his service, which in the final analysis is what the consumer really wants.

Charles A. Prickitt

(Upjohn Company, New York)

Chairman, Drug and Chemical Section, New York Board of Trade

In the drug, chemical, and allied trades, the year 1928 appears as one of the most significant in history. It was crowded with achievement, and the industry applied to business common sense, the harvest of discovery which science achieved.

It may be said that this does not apply alone to the drug, chemical, and allied lines but is reflected in American industries generally. So long as there is a possibility of promoting improvement, the task of the American business man is not completed. In 1928, we had periods of adjustment and combinations of startling size and character; but these gave little indication of unhealthy speculative features being transmitted to the commodity markets. Without very great difficulty business weathered such disturbances as took place in the financial world, and hence we may look into the year of 1929 with confidence and trust.

One of the astonishing things about American business men is found in the fact that the 1928 Presidential election, with all of the uncertainties involved, passed into history as but a ripple upon the surface of America's position among the nations of the world, and American business men assumed their daily activities at the moment that the polls closed and have gone serenely on as though nothing had happened to disturb complacency and confidence. Such an example of co-operative control could not be equalled by the business men of any other nations on earth.

During 1928 the combination or consolidation of large wholesalers and manufacturers in the drug trade and the extraordinary development of the chain stores, with the lining up of what might be called independent retailers under other huge distributing agencies, became a very serious problem which disturbed the complacency of the trade. Every concern necessarily gave to the new problems keen study and discussion as to their future policies for the conduct of their business. It is undoubtedly true that a majority of our manufacturers and wholesalers radically changed some of their long-established customs, and although the end of these combinations may not yet be sighted, probably every house is better prepared in 1929 to meet any further new conditions and restore the harmony of all of its business relations.

While the outlook for 1929 is very encouraging from a business point of view, it probably will be more or less disturbed by the tariff revision which appears to be destined for enactment in the approaching Summer months. For a little while it will open up the whole field of rates of duty on drugs, chemicals, and other commodities to possible readjustment, but in view of the pronounced attitude of the leaders in the new administration, it would appear as though nothing radical will be accomplished, and this anticipated situation will probably not disturb the trade to any material degree.

There will probably be legislation proposed, seriously affecting the management and operation of practically every branch of the drug trade. As an illustration, I understand that a measure will be introduced, designed to do away with or minimize the practice of multiple seizure of drugs and other commodities as provided under the pure food and drugs act. This suggests a serious problem in enforcing the food and drug law, and it has frequently caused manufacturers to yield to any demand of administrating officials. In this connection I will say that the Drug and Chemical Section of the New York Board of Trade, which is composed of all houses in the drug, chemical, and allied trades, will undoubtedly give this proposition a careful and definite consideration and present its conclusions to Congress.

Using the record for 1928 as a criterion of what might be expected in 1929, it indicates that the coming year will be equally as good in net results as its predecessor, and that the matters of production and sales volume and distribution may exceed even those of the last year. The business sense of America's drug men, their continual development of scientific benefits resulting from persistent investigation and experiment, and ability necessary to meet from time to time any new conditions which may arise, justify the statement that the drug, chemical, and allied industries will continue to advance to higher degrees of satisfaction as the year 1929 rolls along.

Herbert R. McIlvaine

(McIlvaine Brothers, Philadelphia)

President, Philadelphia Drug Exchange

The year 1928 in the drug, chemical and allied industries has shown a marked improvement over the previous year, and the outlook for 1929 is even better, excepting the distribution of patent medicines, which is in a most unsatisfactory economic condition. Business developments have reached new figures, and with practically no overproduction. The relations between employer and employee, due to better working conditions and better financial returns to the worker, have been very gratifying.

J. A. Handy

(Larkin Company, Buffalo)

President, American Manufacturers of Toilet Articles

The outstanding feature during the year 1928 in the American manufacture of toilet articles, perfumeries and cosmetics has been the realization that, in order to meet the ever-increasing foreign competition, it is necessary for the manufacturers of these items to be more aggressive in their advertising and merchandising policies and to put out a class of products which, in appearance and quality, would match those of their foreign competitors. A good start has been made in this direction, and I believe that during the year 1929 more intensive efforts will be manifested along the same lines.

Our industry has also reflected the general industrial trend of the time in the formation of several large mergers which took place during the past year. It remains to be demonstrated whether or not large industrial mergers in the esthetic line of toilet preparations will result in finer, better and more up-to-date creations, greater individual responsibility to the public and more aggressive and practical merchandising and advertising policies on the part of the merged corporations. If the inspiration for mergers is one of better products and better service to the public, rather than high finance, then they should be a constructive force in our industry.

The year 1929 should also evolve and develop new merchandising outlets for our products. During the year 1928 the increased amount of capital invested in beauty parlors was a move in the direction of enlarged outlets for toilet preparations. This channel and other new channels of an educational nature which may be developed, if kept under high-class control and management, should be factors in giving wider distribution to American toilet preparations.

Basically, the writer senses an under-current of thought and desire abroad in our land for the finer and more esthetic things in life, with lessening emphasis upon just the purely material phases of existence. It is his earnest hope that the ferment may continue to leaven the loaf of our "body politic" for a larger development of the arts and sciences which go to bring a fuller measure of beauty, joy and happiness into our lives.

Benjamin H. Old

(B. H. Old & Co., New York)

President, American Spice Trade Association

The year just closed has been a generally prosperous one for those in the spice business. The markets have been moderately active, with advances and declines diversified throughout the list—but the former predominated.

Pepper, which constitutes about 60 percent of the entire spice business, ends up the year 1928 at a price of about 35 cents, which is identical with that shown a year ago. This does not tell the story, however, as during the year the top price of 41½ cents was reached for spot pepper, and the low price of 26 cents was done for new crop Java pepper.

The main feature of interest in pepper is the under-production to the point where the London stocks are dangerously near the vanishing point, and we look to London to carry the bulk of the pepper stock. Similar conditions apply to white pepper, and to a more marked degree.

Cloves show a sensational advance, due to an exceptionally small crop in 1928 and to a new point of consumption, the Dutch East Indies, which have taken a number of thousands of bales from Zanzibar, a thing unknown in previous years. The story comes from the other side that this use of cloves is in the manufacture of native cigarets, a few specimens of which put in their appearance on this market contained in straw wrappers. Whether or not this consumption accounts for the Dutch East Indian demand, it is certain that the cloves shipped to the Far East have apparently disappeared into some new form of consumption. The present price of 35 cents is the highest in recent history, and predictions are made by London dealers that materially higher prices will prevail.

The outstanding feature during the year was the increase in the policy of so-called "hand-to-mouth" buying on the part of the grinders, and that habit seems still to prevail. This has, at times, caused unsettlement in price movements, sharp upturns when insistent demand entered the market and cut prices when lots were pressed for sale by urgent sellers.

The most important achievement that has occurred in the spice trade in a long while is the raising of the standard of quality of Dutch, or Lampong, pepper. The American Spice Trade Association had been in treaty with the authorities in Java, endeavoring to secure guarantees respecting the percentage of dust permitted in pepper exported from Java and Sumatra. It was most gratifying, therefore, to have the Dutch government issue an edict prohibiting, under heavy penalty, the export of any pepper containing dust in excess of 2 percent. This was the end to which our association had been working for a long time and will definitely put a stop to the export of excessively dusty pepper, which has been the cause of considerable friction between Eastern shippers and American buyers for some time past.

The outlook for this year is generally considered favorable for a steady, heavy demand for all the articles on the list, due to moderate stocks in the hands of the grinders.

Cottonseed Products in 1927

According to data collected at the 1927 biennial census of manufactures, establishments engaged primarily in the manufacture of cottonseed products during the 1926-1927 season reported a total output valued at $275,650,510.

This industry embraces only establishments, with total products over $5,000 in value, which are engaged primarily in the manufacture of cottonseed oil, cake and meal, hulls, linters and motes and grabbots. It does not include establishments which crush cottonseed and refine the oil but which are classified, on the basis of their major products, in other industries, such as "Fertilizers," "Lard compounds and other lard substitutes," in addition to the data collected at the biennial census of manufactures, the Bureau of the Census compiles monthly data on cottonseed received, crushed and on hand, and on cottonseed products manufactured, shipped out and on hand, in accordance with the requirements of the Act of Congress approved August 7, 1916. As the monthly canvass is not confined to establishments of any specified size, the monthly reports include data for all establishments, regardless of industry classification or value of products, engaged in crushing cottonseed and refining cottonseed oil.

According to the data collected at the monthly canvass, 570 oil mills (as against 546 classified in the "Cottonseed Products" industry) crushed a total of 6,305,775 tons of cottonseed during the 1926-1927 season, and the total output of cottonseed products (exclusive of refined cottonseed oil) was made up as follows:—Crude oil, 1,887,910,155 pounds, valued at $142,242,000; cake and meal, 2,840,084 tons, valued at $72,476,000; hulls, 1,854,389 tons, valued at $8,882,000; linters, 1,041,864 running bales, valued at $16,684,000; hull fiber, 101,677 bales (500 pounds per bale), valued at $1,057,438; motes and grabbots, 44,748 bales, valued at $332,146. Most of the refined cottonseed oil is produced by establishments in industries other than "Cottonseed Products." The total production for the 1926-1927 season was 1,656,478,187 pounds, of which amount only 339,565,680 pounds, valued at $32,231,837, was produced in the "Cottonseed Products" industry.

Of the 546 establishments classified in the "Cottonseed Products" industry which reported for 1927, 174 were located in Texas, 54 in Georgia, 53 in North Carolina, 45 in Oklahoma, 44 in Mississippi, 41 in South Carolina, 35 in Alabama, 30 in Arkansas, 22 in Louisiana, 21 in Tennessee, 10 in California, 6 in Arizona and the remaining 11 in Florida, Illinois, Kentucky, Missouri, New Mexico and Virginia.

Detailed figures follow:—

Number of establishments	546
*Wage earners (average for the year)	18,384
Wages	$14,219,815
Cost of materials, mill supplies, containers for products, fuel and purchased power, total	$219,496,063
Materials, supplies and containers	$212,842,964
Fuel and power	$6,653,099
Products, total value	$275,650,510
Crude cottonseed products	$232,376,277
†All other products	$43,274,233
Value added by manufacture	$56,154,447
Horsepower	269,900

* Not including salaried employes.
† Includes refined cottonseed oil, 339,565,680 pounds, valued at $32,231,837; soap stock, 87,274,005 pounds, $1,831,330; fertilizers, 67,322 tons, $1,820,173; stock feed, 12,914 tons, $215,718; receipts for custom ginning, $2,119,304.

Products by Quantity and Value

	Season 1926-1927.
Crude cottonseed products made in 570 oil mills, all industries, aggregate value	$241,673,584
Made in the "Cottonseed Products" industry, value	$232,376,277
Cottonseed products of other industries and of establishments with output valued at less than $5,000, value	$9,297,307
Crude oil—	
Pounds	1,887,910,155
Value	$142,242,000
Cake and meal—	
Tons	2,840,084
Value	$72,476,000
Hulls—	
Tons	1,854,389
Value	$8,882,000
Linters—	
Running bales	1,041,864
Value	$16,684,000
Hull fiber—	
Bales (500 pounds)	101,677
Value	$1,057,438
Motes and grabbots—	
Bales (500 pounds)	44,748
Value	$332,146

Chromite in Ontario

The first important discovery of chromite in Ontario has been made at Obonga Lake, 30 miles southwest of Armstrong Station, on the Canadian National Railways. No work has yet been done to determine the extent or ecenomic importance of the deposit, but samples assayed by the Ontario Department of Mines tested 26.86 percent, or 39.23 percent of oxide of chromium. These percentages would indicate a deposit sufficiently high-grade to permit its use for practically all important purposes.

In addition to its use for alloying steel and in the manufacture of rustless iron, chromite is an important material in paint manufacture. Practically all the chromite used in the Canadian paint industry is imported from Southern Rhodesia, New Caledonia and Cuba, with a little from the United States. Several chromite deposits have been located in Quebec, but no development has been undertaken there. Previous discoveries in Ontario have been too small to justify commercial development.

Obonga Lake lies directly west of Lake Nipigon, and is accessible by water from Wabinosh Bay. The deposits will be investigated this season by the Ontario mines department.

Government in Its Relations With Business

Administrative, Legislative, and Judiciary Functioning, Prosecutions, Investigations, Trade Regulating, Tariff Revising, and Prohibition Experimentation That Occupied the Time of Federal Agencies in 1928

Government Co-operation Extended

The policy of co-operation between government and business was continued in 1928 and to a degree permeated the functionings of all Federal departments.

The idea of self-regulation of business was followed out by the Department of Justice in the application of the antitrust laws by the Federal Trade Commission in its institution of the trade practice conference and the stipulation, by the Department of Agriculture in announcing projects to be prosecuted under the various laws its administers, and by the Department of Commerce in its simplification and standardization work, its industrial advisory committees, and its co-operative studies of business problems.

As concerns the chemical industry, the outstanding incident of contact with government during the year was the conference of chemical executives with the Bureau of Foreign and Domestic Commerce of the Department of Commerce in February. A similar conference more than a year previously had recommended another meeting, but stimulus to the suggestion was given by the many reports current at the first of the year of the rapid growth of the cartel movement in the chemical industry of Europe. Nearly three hundred executives of the American chemical industry were invited by Herbert Hoover, Secretary of Commerce, and in order to give this group first-hand information regarding the truth of the European industrial situation, the department called in two of its foreign representatives, William T. Daugherty from Berlin and Daniel J. Reagan from Paris, both trade commissioners specializing on chemical matters. These men went into great detail about the strength of the cartel movement and its limitations and the condition of the chemical industry in the leading nations of Europe. From them the impression was secured that the cartel is not nearly so formidable as it was first appeared, and that it does not unduly threaten the American chemical industry or even constitute an immediate menace for our export trade. William J. Donovan, Assistant to the Attorney General, also talked on cartels, outlining their legal aspects and their relation to United States antitrust laws. Other representatives of the Bureau of Foreign and Domestic Commerce, particularly of its chemical division, told of opportunities for increasing business and decreasing costs in both export and domestic trade.

Elimination of Waste

Wastes in domestic distribution were particularly stressed before the chemical executives, and concrete suggestions were made for reducing these losses. It is along the lines of domestic commerce that the Bureau of Foreign and Domestic Commerce has been turning more and more attention during the past year, and some interesting studies were undertaken. To quote from Dr. Julius Klein, director of the bureau:

> There is a deepening recognition on the part of American business that the most important problems of the immediate future are those concerned with marketing and distribution. American industry has made rapid strides in the past decade toward increasing the efficiency of manufacturing and the productive processes. Progress in distribution has not kept pace, and much of the complaint about oversupply in various industries in reality has meant underdistribution.

Realizing this, the bureau last year expanded its work in costs of domestic distribution. The studies which are being carried on are pointing out some of the wastes in handling unprofitable commodities and serving unprofitable customers and are demonstrating concretely that the so-called "hand-to-mouth" buying in many instances is a problem of hand-to-mouth selling. Distributors have been so obsessed with the idea of volume of business that they have at times lost sight of the fact that the small order may entail an actual loss to the seller, and that the greater the number of such orders filled the greater the possible loss and the greater the margin of profit that must be exacted from the large-order end of the business. These and many other aspects of eliminating wastes in our domestic trading have engaged the attention of the bureau during the year.

This research into distribution problems by the bureau has not been confined to the manufacturer or the wholesaler, but the problems of the independent retailer, hard pressed by competition from the highly organized chain store, have been taken up by the government economists. A series of studies were undertaken to show the retailer where his profits go, and the progress made during the year was sufficient to demonstrate that research of this sort can be turned into dollars by the progressive merchant.

Another section of the Department of Commerce, the Bureau of Standards, has outgrown the purely laboratory conception with which it was founded and has been offering its services to industry for the elimination of waste through simplification and standardization. A new plan, the development of a commercial standard, was put into operation during 1928 with satisfactory results. Through conferences with representatives of all branches of interested industries, standards were drawn up and promulgated for clinical thermometers and for dry cleaners' naphtha or Stoddard solvent. The intricate problem of simplification and standardization of the divers glass containers used in the drug and pharmaceutical trades, not to mention proprietary bottles, was undertaken during 1928 by a committee of the industry working in co-operation with the Bureau of Standards.

Trust Law Counsel

The Federal antitrust laws have now been accepted by industry pretty generally, and in planning mergers or trade agreements nowadays business men usually scheme how they can keep within the laws rather than how they can get around the laws. Realizing this, the Department of Justice has adopted a policy of helping industry by giving constructive advice regarding proposals for business deals that might come within the purview of the antitrust statutes, and business men have been quick to take advantage of this policy by submitting their plans to the department. This new policy is thus described by William J. Donovan, Assistant to the Attorney General, in charge of antitrust matters:

> In administering the antitrust laws, the department has sought to co-operate with those desirous of conducting their business in conformity with those laws. Without abating the insistence that the statutes must be obeyed, it has welcomed the opportunity to aid those engaged in interstate commerce to maintain lawful conditious without resort to litigation. The value of this policy of co-operation is reflected (1) in the prompt application of the law to new business experiments, (2) in the frank revelation by business units of their conditions and their plans, (3) in general economic stability resulting from confidence in rather than fear of government, and (4) in securing the full effect of the public policy of this country as expressed in the antitrust laws with a minimum cost to the government and to the prospective defendants.
>
> It has been the aim of the department to meet at their inception business projects involving possible violations of the antitrust law. It is believed that this method insures, not only more effective enforcement, but by anticipating and having determined the questions involved enables industry to be guided by the decisions of the supreme court.
>
> The department has applied its policy of co-operation to trade associations, because it believes that proper associations afford in large part solution of many industrial problems. Furthermore, it has recognized the practical desirability of observing the regularity of their conduct.

Contacts With Business

This same policy of advisory-before-the-fact has been followed more or less by other branches of the federal government. The United States Public Health Service, for example, brought together leaders of the radium-using industries to work out measures for safeguarding the health of workers. The trade practice conferences of the Federal Trade Commission increased both in number and in the nature of the trade abuses attempted to be curbed by this new factor in business regulation. The stipulation, whereby an accused business agrees to abandon a practice considered unfair and the commission drops the case without publicity, has also increased in use.

In food and drug lines, the Department of Agriculture has worked with contact committees of the industry, has adopted the policy of advising manufacturers on labels, has made public announcement of certain practices, which it intended to prosecute under the laws, and has sent its field men to work with manufacturers in analysis and labeling of their products.

The statistical and reporting sections of the Department of Commerce have continued their policy of attempting to give those facts of world trade, which the interested industries desire. Examples of this type of co-operation during the year were the world petroleum survey undertaken jointly by the department and the American Petroleum Institute and the enlargement of the European fats and oils reporting service at the request of the trade.

The Federal Radio Commission has attempted to meet the public convenience, interest and necessity in untangling the broadcasting jumble, and with that in view granted the use of certain short-wave radio channels for geophysical petroleum prospecting while withholding, at least for the time, approval for the use of short waves for point-to-point land communication by petroleum companies.

Under an act passed by Congress during the year there was created an arbiter to pass on all claims of former enemy citizens for property seized by the government during the war. German chemical companies asked that patents seized by the Alien Property Custodian and sold by him to the Chemical Foundation, which later licensed their use to the government, be classified with patents licensed directly to the government by the custodian and therefore entitled to payment under the act. After two lengthy arguments on the subject the arbiter ruled that the law did not intend to include these patents and the former owners could not file claims for them.

Congress and Business Matters

The greater part of the Seventieth Congress fell within the calendar year 1928, and the year's legislative grist saw a variety of measures, ranging from legislation to reduce taxation to preparations for increasing the tariff.

Two problems which had been pending since the war were acted on during the year. An act providing for the return of alien property and for the settlement of claims against the United States by former enemy nationals was passed and put into operation. A plan to dispose of the Muscle Shoals power and nitrate plants won approval of both house and senate, but as the plan involved putting the government into the fertilizer business the bill was vetoed (in pocket) by President Coolidge, so the matter is still a subject for legislative action.

Another important measure vetoed by the President during the year involved a reorganization of the United States Public Health Service. As originally proposed, this bill would have permitted the transfer to the health service of the work relating to the public health now done in other departments and bureaus. Interests opposing any possibility of disturbing the administration of the food and drug and other acts strongly contested this proposal, and it was abandoned. As finally passed the bill proposed to place public health service physicians, surgeons, sanitary officers, pharmacists and nurses on a basis similar to those in the army and navy medical corps, with commissions and fixed methods of promotion. While he objected to the militarization of the public health service, the President's principal reason for vetoing the bill was that restrictions placed around the appointment of certain officers was a limitation on the power of appointment given the President under the constitution.

Trust-Law Modification Failed

Another measure which gave promise of great importance but which failed of passage in the house after a spectacular debate was a proposal to modify the antitrust laws to permit importers to combine and pool their purchases of potash, sisal, rubber and other essential raw materials not produced in sufficient quantities in the United States. The plan was similar to the privileges extended to exporting associations by the Webb-Pomerene act, and was designed as a threat against foreign monopolies, but opposition arose on the ground that it would permit the "rubber trust" to keep up prices of tires.

Prohibition occupied a large part of the congressional debates, as usual, and two measures were proposed to change the application of the national prohibition act. Following several discussions of so-called "poison alcohol," an amendment was proposed to the appropriation bill for the Bureau of Prohibition to prohibit any of the funds to be used in connection with alcohol denatured by poisonous materials. This proposal was defeated by the house. In the senate a bill was introduced to prevent the use of poisonous denaturants, but no action was taken on it.

A number of bills were introduced to increase the penalties under the prohibition act, the only two receiving committee consideration being identical bills introduced by Senator Wesley Jones of Washington and Representative Gale H. Stalker of New York. These bills simply provided that the maximum penalty which could be imposed be a $10,000 fine or five years' imprisonment, or both. Opposition to the bills was registered by representatives of industries dealing in alcohol and medicinal liquor, who wished a safeguard against heavy penalties for technical violations or for the violations of employes. Committees of both house and senate reported these bills, but the senate committee amended the Jones measure so that the increased penalties would apply only to criminal prosecutions. Both bills remained on the calendars the remainder of the year.

Narcotic Tax Reduced

A reduction from $6 to $3 per year in the Federal tax on dealers in narcotics was included in the revenue reduction bill signed by President Coolidge May 29. A bill providing preliminary work toward the establishment of two penal farms for the confinement and treatment of Federal prisoners who are narcotic addicts was passed by the house and given committee approval in the senate during the year. A bill was introduced to amend the narcotic import and export act so as to exempt from its provisions those preparations which are not included in the Harrison, or domestic, act.

A bill to permit the sending of poisons in the mails under regulations of the Postmaster General was passed by the house and given a place on the senate calendar before the close of the year.

The cotton and cottonseed oil markets were the subject of much debate, particularly in the senate. Predictions of price decline and alleged errors in reports of cotton carry-over by the Department of Agriculture were severely criticized by many Southern members, and a number of bills were introduced to modify or eliminate cotton statistics. A senate committee spent months investigating charges of manipulation of the cotton market through the use of untenderable cotton.

A bill to change the cottonseed oil futures contracts used by the New York Produce Exchange was approved by a senate committee, but was not acted on by the senate. The bill would have made different grades of oil tenderable and remove the requirement that it be in barrels. Upon the urgent request of cotton oil traders and officials of the Produce Exchange action on the bill was deferred pending the outcome of arbitration between interested parties. An unofficial committee of business men, appointed by the Secretary of Commerce, took up the complaints against the cotton oil contracts and recommended some changes in the procedure, with the result that no further legislative action on the matter was proposed.

Two investigations of fertilizer conditions were proposed in Congress during the year. In the house Representative William W. Larsen of Georgia introduced two resolutions seeking an investigation of the enforcement of the antitrust acts against the fertilizer industry. These plans were reported adversely by the committee in charge on receipt of a letter from the Attorney-General reciting court actions and investigations of complaints against fertilizer firms. Senator Kenneth McKellar of Tennessee declared that Tennessee farmers were forced to pay more for fertilizer than those across the line in Alabama. Explanations from the National Fertilizer Association and from the Attorney-General failed to satisfy the senator, but no official investigation was ordered.

Short Packages Assailed

The slack-filled package bill, which has been before Congress for several years, was passed by the house in 1928. It is designed to amend the food and drugs act by preventing the packing of foods in containers not so full as practicable or in containers so shaped as to deceive or mislead the

public as to the actual amount of the contents.

A bill to extend the provisions of the oleomargarine laws to cooking compounds made in semblance of butter or to be sold as butter received lengthy hearings before the house agriculture committee and finally secured its approval.

Two bills were introduced to amend the naval stores act by removing the prohibition against all use of the word "turpentine" in describing products that were admittedly turpentine substitutes. Several measures were proposed to regulate the use of spray painting machines in all cases where the federal government has jurisdiction.

One proposal which created much confusion, but which never received any official action, was a bill to regulate the manufacture and sale of cosmetics and toilet articles, proposed by Senator Royal S. Copeland of New York. The interested trades prepared to fight the bill, but it was never brought up for committee hearing.

The second session of the Seventieth Congress opened in December with all the unfinished business of the first session before it and with but three scant months to act on measures before the life of the Congress expired, and when all bills not nnally enacted will die and must be reintroduced in the following Congress.

Federal Trade Commission Active

The outstanding feature of the work of the Federal Trade Commission during 1928 was the large number of trade practice conferences held with various branches of industry and the rules of business conduct laid down by this procedure.

While the division of trade practice conferences has existed in the commission for some time, its work increased enormously during the past year. Not only did the number of conferences increase, but the importance of the industries they involved, the percentage of production represented, and the sweeping character of the definitions of unfair trade practices adopted, all demonstrated the growing significance accorded to self-regulation of industry.

Among the trade practice conferences held were two with the glass industry, one involving heavy sheet glass and the other concerned with ordinary window glass. The most important accomplishment of the conference with the heavy sheet glass industry, which was held in March, was the elimination from the trade of the name, "demi-plate," and similar designations which had been used on heavy drawn glass, much to the confusion and deception of the public. Plate glass, the conference said, meant only rolled glass, ground and polished in accordance with United States government specifications. The flat glass industry, meeting three months later, adopted resolutions against breach of contract, misbranding, fraud and misrepresentation, false labeling, substitution of quality, secret rebates, and price discrimination, and also condemned a number of other practices, such as selling at cost to induce purchase of other products, and dumping of goods.

Cottonseed Oil Conference

One of the most significant of all the conferences ever held was that with the cottonseed oil industry, in July. It is customary for the commission to divide the industry's rules of practice into two groups, one which it affirmatively adopts and will enforce against violators, and one which it accepts as the expression of the industry but cannot adopt as being interpretations of the law against unfair methods of competition. In passing on the rules of the cottonseed oil industry the commission, by a bare majority, included in the first group of rules a resolution to the effect that the clandestine violation of the second group of rules would be considered as much as unfair method of competition as an open violation of the first group.

Cottonseed oil rules in the first group condemned price discrimination, commercial bribery and misbranding, and they also provided for the publication of price statistics. The second group of rules involved a large number of trade practices, including the cancellation and wrong dating of contracts under certain conditions, and they defined the character and equality of commodities, regulated the time of delivery and condition of purchases, and even set the rates of commission to be paid.

Paint and Varnish Conference

A very large and yet very simple trade practice conference was held in August with the paint and varnish industry. About 60 percent of the production of the country was represented. The only subjects brought up for discussion related to commercial bribery, false advertising, and misbranding, and as both the industry and the commission had been attempting to eliminate these practices for years, resolutions condemning them were easily adopted. This conference adopted a procedure which has been followed in only a few other conferences, that of creating a committee of the industry to work with the commission in making the rules effective.

Rules adopted by the conference of edible oil packers were approved early in the year. The related to slack-filled containers, standard-size containers, standard net weights per gallon, misbranding and simulation of standard containers.

Other conferences held during the year were with the fur industry, hickory handle industry, millwork industry, waxed paper industry, rebuilt typewriter industry, publishers of periodicals, knit underwear industry and grocery industry. The grocery conference, the results of which were not nnally passed on by the commission during the year, gave promise of being an epochal move in retailing, since it was an attempt to curb price-cutting and the growth of chain stores, as well as other evils of wholesale and retail distribution. Dates were also set for conferences with the fertilizer and petroleum industries.

Texas Panhandle Oil Prices

While the investigation of the publicity methods of the public utility companies overshadowed all other investigations of the Federal Trade Commission during 1928, the commission was not idle along other lines. Early in the year the commission sent to Congress its report of an investigation of the sudden drop in prices for crude petroleum in the Panhandle district of Texas in 1926. The commission found that, due to overproduction, lack of sufficient storage, transportation and refining facilities, and because of the peculiar physical properties of the Panhandle crude, particularly its high content of sulphur and paraffin, it was necessary for purchasers to change from a gravity to a flat price basis and to lower the offered prices materially.

In March the commission reported to Congress on its investigation of cottonseed prices, it having been charged that prices were fixed through agreements between mills, in violation of the anti-trust laws. While evidence of co-operation between crushers' associations was found, it was not discovered that this was for the purpose of setting prices, and the commission declared that the lack of a uniform system of grading was the cause of much of the dissatisfaction among both farmers and crushers.

The commission also made public its report on co-operative marketing associations.

The investigative forces of the commission also made progress during the year in studies of the bread and flour industry, resale price maintenance, open-price associations, lumber trade associations, price bases, duPont investments and blue sky securities, and also began work on an investigation of chain stores, as directed by a Senate resolution.

Soap Trade Practices Attacked

Among formal complaints prosecuted during the year by the commission, soap played a prominent part. The use of the word, "English," to describe a soap not made in England was banned in a complaint made against James J. Bradley & Co., New York. A cease and desist order was issued against this firm early in the year, and in the fall the commission applied to the courts for enforcement.

A case of far-reaching importance reached the stage of final argument during the year, the definition of castile soap. The complaint against James S. Kirk & Co. had been pending for months, and testimony was taken in many places throughout the country. The commission's attorney went back into history and relied on medical works to prove that castile soap means only soap, the fatty ingredient of which is olive oil and nothing else. Domestic manufactureers of coconut oil and tallow soaps contended that, in the United States, the trade and popular conception of castile soap was not a strictly olive oil soap, and that castile meant only a good, pure soap.

Among the complaints prosecuted under the Clayton act, charging restraint of trade through purchase of a competitor, were a case against the Pennsylvania Salt Manufacturing Company, alleged to have monopolized the bleaching powder industry through purchase of the Michigan Electrochemical Company, and one against V. Vivaudou, Inc., charging monopoly of toilet goods markets through the purchase of the Alfred H. Smith Company and the Melba Manufacturing Company.

Activities against resale price maintenance plans were continued by the commission, and a cease and desist order was issued against Scott & Bowne, prohibiting contracts, promises and understandings regarding the retail price of Scott's emulsion. A complaint was also issued against Johnson & Johnson for using alleged illegal means of maintaining prices on baby powder. The cease and desist order against the New York Pharmaceutical Conference was modified so as not to prevent propaganda or educational campaigns in favor of resale price maintenance.

A large number of complaints were investigated against the use of synthetic flavors in carbonated beverages, and, after a conference with bottlers, the commission reffiarmed its stand that the name of a fruit cannot be used on beverages unless the actual fruit goes into the product.

Tariff Rate Changes Ordered

Chemical products played a large part in the investigations conducted by the United States Tariff Commission last year with a view of changing rates of duty under the flexible provisions of the tariff act. Five investigations of chemicals were instituted, eleven hearings were held, and Presidential proclamations were issued covering four commodities during 1928.

The flexible tariff was given severe court tests, its repeal was asked by a congressional committee, and its difficulties were subjected to a frank discussion by the commission itself; while at the close of the year Congress undertook to revise the entire tariff act of 1922, including not only the rates of duty but the administrative provisions and the flexible section.

Edward P. Costigan, one of the original members of the Tariff Commission, resigned March 14 after eleven years of service, and his place was filled by Frank Clark, a former representative from Florida.

The chemical division of the commission brought up to date its files of information on the many products in its field with a view of submitting the information to Congress on request. The annual census of dyes was issued in October and showed that the 1927 production of coaltar dyes was the largest in American history, being 95,000,000 pounds, an increase of 8 percent over 1926. Domestic dye manufacturers supplied 94 percent of the American consumption and in addition exported 27,000,000 pounds. Prices declined 7 percent from 1926. The domestic production of synthetic organic chemicals not of coaltar origin was shown to have increased more than that of coaltar products; the 1927 output was 280,992,825 pounds, an increase of 31 percent during the year. The dye census also included a review of the international dye trade in 1927 and pointed out the centralization and coordination and the technical advances accomplished by foreign chemical industries.

Duty Changes Asked

A number of petitions for changing duties on chemicals under section 315 of the tariff act were received during the year, including an application for a decrease on methanol, once raised under this section, and for changes on argols, peanut oil, perfumes, and others not acted on during the year. Investigations were ordered into the costs of production of refined potassium nitrate, decolorizing carbons, barium chloride, and tungsten. None of these inquiries were completed during 1928.

The duties on four chemicals were increased by presidential proclamation during 1928, based on investigations made by the commission. The duty on precipitated barium carbonate was increased from one cent per pound to 1½ cents per pound, effective April 25, differences in cost at the principal market having been shown to be 1.621 cents per pound in favor of the German product.

The duty of 25 percent ad valorem on sodium silicofluoride was transferred from the foreign value basis to the American selling price, effective September 15, the maximum increase of 50 percent in the rate not being sufficient to equalize production costs.

The duty on metallurgical fluorspar was increased by the President from $5.60 to $8.40 per ton, effective November 17.

The potassium permanganate duty of 4 cents per pound was increased to 6 cents, effective December 16.

During the course of the year the commission issued a large number of preliminary statements of information covering investigations made under section 315 and held hearings on them. Among the commodities covered were cream of tartar and tartaric acid, eggs and egg products, glue, peanuts, potassium permanganate, whiting, window glass, flaxseed, linseed oil, and sodium phosphate. All of these involved applications for an increase of duty. With the exception of potassium permanaganate, none of these investigations reached the point of final action by the President during the year.

A final report on cast polished plate glass was completed during the year and submitted to the President pursuant to an application for an increase in duty. The ceramics division also completed most of the preliminary work on the investigation looking to an increase in the duty on blown glass perfume and toilet water bottles. Field work in investigations of manganese and of scientific instruments was prosecuted during the year by the metals division under the general powers of the commission in addition to the section 315 investigations on fluorspar and tungsten. The commission's investigation of the costs of producing blackstrap molasses was also completed during the year and a report was in course of preparation.

An investigation of the duty on fertilizer urea was ordered by the senate, but the commission discovered that since there is no domestic production, it is impossible to consider this commodity under the flexible tariff provisions.

Anti-Dumping Moves

All complaints filed under section 316, which relates to unfair competition in importing, were handled promptly by the Tariff Commission. Among the applications under this section which were dismissed without prejudice were those involving sodium nitrate, cocoa butter and olive oil. One inquiry was taken up and concluded during 1928 relating to laminated bakelite products. After an investigation and hearing the commission issued a report stating that the domestic industry was operating efficiently and economically, but that importations were made in violation of patent rights, markings showing country of origin were removed, and samples of genuine bakelite were used to secure orders which were filled with the foreign article. The Secretary of the Treasury issued an order excluding these products from entry into the United States.

A similar action under section 316, also involving a bakelite product, became the subject of litigation carried to the Supreme Court of the United States. The commission's finding of unfair competition in importing synthetic phenolic resin of form C and its products had been appealed by the importers to the United States Court of Customs Appeals, as provided by the tariff law. Their contention was that the commission has no jurisdiction over patents or any unfair competition in importing based on patent violations. The Bakelite Corporation declared that this appeal was unconstitutional since the matter was not properly a case or controversy such as comes within the jurisdiction of the court of customs appeals. The court, in a lengthy decision, declared that the matter was a case, and that it did have jurisdiction. Before the appeal could be considered on its merits the Bakelite Corporation went to the supreme court with a petition for a writ of prohibition to prevent the court of customs appeals from entertaining the appeal, and this petition was pending at the close of the year.

The constitutionality of the flexible provisions of the tariff act was upheld by the Supreme Court in a decision rendered in April in the case brought by the J. W. Hampton Jr. & Co., importer of barium dioxide. The importer contended that the delegation to the executive branch of the government of the legislative function of fixing revenues was unconstitutional, as was also the basing of rates on economic conditions, since, under the constitution, taxes may be laid for revenue only. The court held that, while Congress may not delegate purely legislative duties, it is proper to lay down principles under which rates are to be fixed and to leave the application of the principles to commissions. If the primary purpose of a tax is to secure revenue, the tax is constitutional, regardless of its incidental effects or motives, said the court.

Tariff Clash With France

The tariff controversy between the United States and France became acute during the year, and France declined to permit officials of the Tariff Commission or Bureau of Customs to conduct investigations within her borders. France also asked the Tariff Commission to conduct a number of investigations under section 315 with a view of decreasing the duties of articles France wished to send the United States more freely. In some of the articles there is no domestic production which would permit the inquiry to be undertaken, and in others France is not the principal competing country. Others of these applications are still pending before the commission. France also asked that the customs, food and drug, and sanitary regulations affecting her products be made less stringent, and the government departments concerned took the request under advisement.

A special committee of the senate appointed to investigate the flexible provisions of the tariff act brought in a report in May recommending that section 315 be repealed. The chief reasons given were that months and years elapse between the filing of an application and action by the President;

that the flexible provisions take nearly all of the commission's time without proportionate results; that it is impossible for the President to give sufficient consideration to the economic reports on which changes must be based, and that tariff making is essentially a legislative duty and should not be delegated to the executive.

Administrative Difficulties

The commission itself took occasion in its annual report to point out a number of the difficulties encountered in administering section 315, although it made no recommendations regarding its change or repeal. The chief obstacles outlined were the determination of the principal point of competition in the United States, the determination and application of transportation costs, the inclusion of selling expense in production costs, the determination of the principal competing country when the country of greatest imports has not the lowest cost, the use of invoice prices when foreign costs are not obtainable, and the fact that only a 50 percent change does not always equalize production costs.

With the convening of Congress in December the Committee on Ways and Means of the House of Representatives, in compliance with political campaign pledges, announced that it would begin in January to hold hearings on a revision of the tariff act, and invited all manufacturers, importers and consumers to present any changes in rates that might be desired. The Tariff Commission at once began preparation of summaries of information regarding every commodity listed in the act, and also other data relating to imports and foreign costs which might be of value to the committee in framing a new bill.

Cartels and Foreign Relations

The foreign cartel movement continued to advance during 1928, but the threat against the American chemical industry, which loomed large toward the close of 1927, became somewhat less formidable as the activities and limitations of the chemical cartel became better known.

Foreign monopolies, combinations, and cartels constitute a real danger to American business, in the opinion of most business men, and every foreign development is watched with the greatest attention; while many steps have been taken to counteract any sinister effects they may have. In keeping with her pre-eminent industrial development on the European continent, Germany has played a prominent part in initiating and carrying on the negotiations for many of the international cartels. The German dye trust, the I. G. Farbenindustrie A. G., continued to expand, embracing more and more units of all branches of the German chemical industry, but negotiations for complete working agreements with the chemical industries of other nations were not so successful as it appeared they might be at the close of 1927.

The necessity of strong rationalization and centralization of an industry within a country as a prerequisite of successful participation in an international cartel became more clearly evident. But there was also evidence that just such national centralization was making progress.

The concern of the American chemical industry regarding European developments had much to do with the calling of a general conference of chemical executives with the Department of Commerce in February. Trade commissioners from Germany and France were called in to report on the latest developments abroad, and their accounts were received with great attention. A special study of cartels was made by the Department of Commerce and a booklet was published on the subject. Bulletins were also issued covering the recent chemical developments in Germany, France, England, and Italy, with especial attention to cartels and agreements. C. C. Concannon, chief of the chemical division of the Department of Commerce, made a trip to Europe in the summer to view the chemical combinations at first hand, and he returned with the declaration that cartels are a permanent and successful form of business, but that since they have taken more definite form of late they are at least that much less of a threat to American industry.

Quinine Anti-Trust Suit

The influence on American business of the actions of foreign industries and governments was brought out in many ways other than the interest taken in the cartel movement, and the Department of State and the Department of Justice played a large part in these activities. The outstanding event of the year relating to foreign monopolies was the suit brought by the Department of Justice against the Dutch quinine monopoly, ending in an agreement to abide by United States anti-trust laws.

The action was started in March, when domestic quinine processors and distributors were called to the department to discuss their relation to the anti-trust laws. Soon after this Federal agents seized some six tons of quinine at the New York warehouse of R. W. Greeff & Co. Coincident with this forfeiture procedure, the government filed both criminal and equity suits against the Kina Bureau, or Dutch monopoly, and its agents, including American distributors. Indictments charged violation of the Sherman law through a conspiracy to restrain trade and to monopolize the trade in quinine, in discriminating in price between different purchasers, and in making tieing contracts. Two other lots of quinine salts were seized in the Spring, but the court cases did not move during the Summer.

Meanwhile William J. Donovan, Assistant to the Attorney General, and Israel B. Oseas, special government attorney, went to Europe to confer with principals of the Kina Bureau. On their return two officials of the Dutch organization who had been in the United States sailed for Holland to complete negotiations over the case.

After protracted negotiations the United States District Court in New York, September 20, accepted a consent decree signed by attorneys for all defendants, including seven Dutch, three Swiss, one Japanese, three German, four French, two English, and seven American firms. The Kina Bureau proper was dropped as a defendant since it had not, itself, taken an active part in the restrictive plan which violated American laws. Since the consent decree perpetually nullified all contracts, arrangements and understandings complained of by the government, the criminal and libel actions were dropped. All parties were restrained from imposing restrictions on the resale of quinine in the United States, hindering the shipment or sale of cinchona bark or derivatives in the United States, participating in any agreement for division of profits or sales territory in the United States, discriminating between purchasers, or selling on the condition that the purchaser will not deal with a competitor of the seller.

East Indies Oil Agreement

Petroleum played a large part in the international relations of American business and government during the year. The settlement of the long troublesome controversy with Holland over reciprocal exploration and production rights was probably one of the most significant accomplishments in this line. For a number of years the Standard Oil Company of New Jersey, through its Dutch subsidiary, had been attempting to secure a concession to drill for oil in the Dutch East Indies, but Netherlands officials refused to sign such concessions. As a result, Holland was listed by the Department of State as a nation which did not give American oil firms the same privileges as her own firms, and, therefore, the Department of the Interior was obliged, under the general leasing act, to refuse to permit any Dutch-owned oil companies in the United States to prospect or drill on government-owned lands. This refusal was resented by the Royal Dutch Shell Oil Company and its American subsidiaries. Matters were deadlocked for months, but in July the Dutch Minister of Colonies granted a concession of nearly 600,000 acres in Sumatra to the Standard company. This action placed Holland on the list of reciprocating nations and reduced a strain on international relations.

The struggle between the Standard Oil company and the Royal Dutch Shell over Indian markets and the sale of Russian petroleum was continued into 1928, but finally reached something of a truce, although there continued to be rumors that the oil market in India was not completely harmonious. In the Fall came word that the two great rivals of the United States in the world petroleum trade were to merge, at least in part, and the Burmah Oil, Ltd., one of the members of the Anglo-Persian Oil Company, was to buy a large interest in the Royal Dutch Shell Oil Company.

Irak Oil Settlement

The Mesopotamian oil question, which at one time threatened international complications, was settled during the year with the apportionment of 23¾ percent of the stock of the Turkish Petroleum Company to the Near East Development Corporation, owned by five American oil firms.

In Spain, a government oil monopoly was established by royal decree in July, and expropriation of the properties of oil companies was commenced. The American embassy in Madrid was instructed to see that there was no discrimination against American firms and that property taken was properly compensated for. But, negotiations dragged, and full settlement with private oil interests was not completed during the year.

Clash With Colombia

In South American oil matters the center of interest was Colombia, where the government cancelled the concession of the Gulf Oil Company to the historic and valuable Barco holdings. When the American embassy made an inquiry on behalf of the Gulf company, the Colombian government replied that it could not tolerate interference in internal affairs. This attitude occasioned a rather sharp note from the Department of State calling attention to the fact that such an attitude was contrary to the customary procedure between friendly nations. Popular opposition to American oil companies reached a high point in Colombia and nationalization of all oil supplies and facilities was attempted, involving a controversy with the Standard Oil company, which owned an oil tract in fee. The Gulf company continued its attempt to recover the Barco concession but was not entirely successful by the end of the year.

Argentina also took up the example set by Mexico and Colombia and undertook to nationalize its petroleum industry. The program had not received complete official sanction by the close of the year, but the plan made sufficient headway to threaten the holdings of the Standard Oil company in a new field which had just been proved at great expense, and the Department of State was again called on to look to the interests of an American company.

Co-operation between the large oil companies figuring in international trade was discussed more or less by the heads of the Standard Oil, the Anglo-Persian and the Dutch Shell concerns at an informal meeting in England during the Summer, and in the Fall, meetings were held in New York looking toward an international agreement for curtailing production in some fields, particularly Venezuela, to stop the world over-production of petroleum. How successful these negotiations were was not learned. Meanwhile the larger American oil exporters, under the leadership of the Standard of New Jersey, took steps to form an export association under the Webb-Pomerene act.

Food and Drug Administration

The first full year of the separation of regulatory and scientific work in the Department of Agriculture demonstrated the advantages of the reorganization. The Food, Drug and Insecticide Administration and the Bureau of Chemistry and Soils were created to set up a law-enforcement machinery divorced from research activities having no regulatory bearing.

The new arrangement has made it possible for the Washington force and the field force of the Food, Drug and Insecticide Administration to proceed with a single objective, unhampered by the demands of unrelated research, and at the same time to carry on investigations that bear on regulatory activities and are necessary for effective law enforcement. The administration is charged with enforcing the food and drugs act, the insecticide act, the caustic poison act, the naval stores act, the tea inspection act, and the milk import act.

The administration has chosen to regard these statutes as corrective rather than punitive and has adopted an advisory-before-the-act attitude by offering constructive suggestions to enable manufacturers to keep their products in compliance with the law. Public notice was given of all plans and projects adopted by the administration for proceeding against products or practices thought to be in violation of the law.

Foods as Medicines

The food and drugs act and regulations under it were republished during the year as "Service and Regulatory Announcements, Food and Drug, No. 1." Under this law, new causes for proceeding against cereal products and baked foods developed this year through the discovery that they were being labeled as of value in maintaining, promoting, or restoring health, or as acting directly as therapeutic agents in the treatment of disease, when such claims were not warranted by the composition. The law was interpreted as meaning that medicated foods, such as chewing gum to which phenolphthaline has been added, crackers containing senna, cereals with added agar-agar, mayonnaise with mineral oil, and candy containing iodide, must be offered for sale as medicines, not as foods. Steps were taken to prevent the marketing of such products unless the labelings indicate that the articles in question are medicines.

The co-operation between the administration and the drug industries was continued through the year, making it possible to curtail many abuses in the traffic in drugs and drug products. An example of the co-operation is that on hypodermic and compressed tablets, a survey showing that only 8 percent were substandard this year, while 34 percent were below standard in 1923.

A uniform scheme for criticizing labels from the standpoint of therapeutic claims was adopted, and through co-operation with the industry, it was possible to bring a large number of labels into conformity with the law without recourse to court action.

A drive was made against preparations falsely claiming to be codliver oil or to have the vitamin properties of codliver oil. All such preparations were checked for results on mice and guinea pigs, using genuine U.S.P. codliver oil as a control, and all which did not give equal results were banned. In many cases it was found that attempts to concentrate the mysterious vitamin properties actually resulted in their loss. A large number of manufacturers and importers of these preparations were induced to discontinue them or to change their labels to conform with the law.

Antiseptics Evaluated

Investigations convinced the administration that some of the so-called "antiseptics" on the market have little or no real antiseptic power, and that others, although antiseptic under certain conditions, are virtually worthless when in contact with body fluids. Efforts were made to bring about a drastic revision of the labeling in this part of the drug industry. A ruling was issued that products, such as salves, ointments, and dressings, that remain in contact with the body for long periods of time, may be designated as antiseptics if they inhibit the growth of bacteria, but that products like mouthwashes, douches, and gargles, that are in contact with the body only for brief periods, may properly be designated as antiseptics only if they will destroy bacteria under the conditions of use, that is, in the dilutions recommended and in the periods of time comparable to those in which they would have an opportunity to act when used as directed.

The examination of anesthetics was continued during the year, special attention being given to ether. As a result of these activities the quality of anesthetic ether is declared to be much improved. Applications were made for public service patents on processes for the purification and preservation of ether, worked out in the laboratory.

The great popular interest in the ductless glands brought out the need for the standardization of glandular products, and the administration began detailed studies on the anterior lobe of the pituitary body with a view of elaborating a method of assay. An improved apparatus for the detremination of volatile oil was worked out, and methods for the examination of ginger and its preparation were developed.

Insecticide Act Enforcement

The work under the insecticide act has been continued along practically the same lines as those followed by the Insecticide and Fungicide Board, formerly charged with its enforcement. A study of the deterioration of nicotine soaps was completed during the year, and this showed that the deterioration in the case of drying oil soaps is due to the condensation of the nicotine with the fatty acids in the presence of oxygen, and in the case of nondrying oils the deterioration is due to volatilization of the nicotine.

The caustic poison act and the regulations for its enforcement were published in an official circular, as was a list of internal and external antidotes regarded as acceptable treatments for accidental injury by the products covered by the act. The field stations of the administration started a survey of manufacturers of products coming within the jurisdiction of the caustic poison law with a view of bringing its provisions to their attention and initiating such action as might be necessary to see that its labeling requirements were met. The reports from the survey indicated that many manufacturers had already taken cognizance of the law. A good deal of experimental work was also done on control analyses, particularly regarding the determination of phenol.

Naval Stores Examined

In accordance with the general plan of the administration, much of the enforcement of the naval stores act was placed in the hands of the field force, particularly the inspection and sampling of turpentine and of mineral oil thinners sold as substitutes for turpentine. The samples thus collected, however, were forwarded to Washington for examination. One new standard was promulgated under the naval stores act during the year, that for rosin having a decided red color, such as wood rosin, known as FF grade. The packing of turpentine in small tins suitable for retailing was also encouraged.

The joint contact committee of the American Drug Manufacturers' Association and the American Pharmaceutical Manufacturers' Association continued its work with the administra-

tion, and during the year brought in its third and fourth reports, dealing with tolerances and methods of analysis for tablets. It also began consideration of its next subject, tolerances for ampuls.

Dr. George W. Hoover, for many years chief of the office of drug control, resigned from the administration in May to enter private practice as an advisor on the food and drugs and related laws, and his place was filled by Dr. James J. Durrett. Dr. J. K. Haywood, chief of insecticide, fungicide and caustic acid supervision, died in November.

Ergot Admissions Challenged

The policy of the administration regarding the importation of crude drugs was challenged in the Federal courts by Howard W. Ambruster, New York drug importer. In a suit filed in the Supreme Court of the District of Columbia in April Mr. Ambruster charged that crude ergot of rye which did not meet the standard potency test and which was old, dirty, mouldy, contaminated and otherwise unfit, was being permitted entry, and he asked an injunction to prevent such importations. The government declared that all importations of ergot are examined and that some are permitted conditional entry while they are being brought up to standard, but that no shipments are given final entry until they are within the law.

The importer contended that anything short of a literal, narrow interpretation of the United States Pharmacopeia regarding the condition of crude drugs is a violation of law and endangers the health of the nation The government counsel asserted that Mr. Ambruster had attempted to corner the ergot market and was using the court to further his scheme. After much argument and the filing of affidavits a temporary injunction was denied, and when the case came up for final consideration the court granted the government's motion to dismiss, saying that the plaintiff had not sufficient interest and that the official acts complained of were discretionary and not subject to court review. An appeal was noted.

Prohibition Experiment Procedure

The first full year of the existence of the separate Bureau of Prohibition in the Treasury Department was characterized by a stabilization of prohibition enforcement and the routineness that accompanies a permanent organization.

Except for the placing of all employees of the bureau under civil service, no important change was made or seriously proposed in the administration of the Volstead and related acts. Changes in regulations and procedure were largely of a minor nature, and the personnel and policies of the administrative heads changed only slightly. Prohibition and narcotics enforcement work were incorporated into a separate bureau in the middle of 1927, and by the close of that year the necessary reorganization and revision han been accomplished; so that during 1928 the work of the bureau was conducted smoothly.

The organization of the bureau at Washington has developed definitely along the line of functions performed by the various units. The narcotic division supervises operations under the Harrison act and its amendments. The legal division carries on the legal duties of the bureau. The technical division operates the bureau laboratory and has supervision of matters pertaining to permits. The field division is engaged in enforcement operations. The administrative division consists of the personnel, accounting, supplies, statistics, and mail sections.

Several territorial rearrangements were made in the twenty-three prohibition districts with the view of better organizing the forces to meet local conditions and to centralize authority in territory having similar problems of enforcement. Organization of the offices of the administrators was made to follow the lines of the bureau organization. In the field division, which is composed of special agents reporting directly to the Commissioner of Prohibition, there was established a section of plant control, composed of a small mobile force of agents specially trained for conducting technical inspection of breweries, alcohol plants, denaturing plants, and wineries. These agents examine and audit the records of such plants so as to detect irregularities, intentional or otherwise, and shortages or overages of materials and products. One important object of this procedure is to serve as a check and to standardize similar inspection work carried on by the force of local administrators.

Under the Civil Service

The act creating the Bureau of Prohibition made all positions in the bureau, except that of commissioner, subject to the civil service laws, and the term of office of any person transferred from the Bureau of Internal Revenue to the Bureau of Prohibition and not theretofore under civil service was made to expire six months after the effective date of the act. During 1928 the Civil Service Commission in co-operation with the Department of the Treasury has carried forward the provisions of the law relating to civil service in the Bureau of Prohibition. The effect of this law has already been felt in the service of the bureau, and a marked improvement was brought about in personnel, the service now being on a much more stable and efficient basis.

During the year the official prescription issued by the government for the use of doctors in prescribing liquor for medicinal purposes was revised. The new prescriptions are in book form and present a simpler system than that formerly used. The new plan was devised to relieve pharmacists of considerable record work and also to make possible a closer official check, providing field officers with information in cases of violation of the law. The cover pages of the book contain complete instructions for the physician, and the prescription form carries information for the guidance of the pharmacist and the patient. The new forms convey to the doctor and to the pharmacist the impression of co-operation with the government.

A manual of instructions for prohibition officers and agents was prepared in pocket size and distributed to employees in the field. It contains rules for the conduct of officers and sets forth in detail the procedure to be followed in making investigations, searches and seizures, and arrests. It also treats other problems and legal situations in non-technical language and has been of benefit in standardizing the work of the field force.

The administrators and special agents in charge were summoned to the bureau during the year for a general conference relating to their problems and to effective means of meeting them. This conference proved very successful in having a more complete understanding of all administrators of the general difficulties of enforcement. A school for the instruction of prohibition agents was also organized in Washington, at which were given lectures covering many phases of prohibition enforcement work. The same type of instruction was then carried to the men in the field, and this plan nas proved so successful that it will be continued.

Simplification Applied

A committee of experts was appointed during the year to survey the system of forms in use in the Bureau of Prohibition with a view to consolidation and revision where found necessary. A careful study was made of the forms of the bureau and a number were eliminated and others consolidated. This study and survey is being continued, and it is expected that the official forms used by the bureau will soon be on a practical and efficient basis.

The technical division as now set up conducts the chemical work of the bureau, supervises the field laboratories, and administers the permissive system. While basic permits for the use and sale of intoxicating liquors for nonbeverage purposes are issued by prohibition administrators, the formulas submitted by permittees are passed upon in Washington. This policy was deemed necessary for the purpose of securing uniformity and better control over products in which alcohol and other liquors are used. Field laboratories were established at eighteen points in order to expedite and facilitate local enforcement work.

The modication of formulas for specially denatured alcohol, which are of the greatest importance to both industry and enforcement, has occupied the time of three chemists in the Washington laboratory. Important results were secured, which put completely denatured alcohol production on a stronger basis. This research work is being continued in the hope of further strengthening the specially denatured alcohol formulas, not only with the view of safeguarding the alcohol, but also for the purpose of making these formulas more adaptable for use in the arts and industries.

The completely denatured alcohol situation has been declared by prohibition officials to be in a better condition in 1928 than has ever existed since the passage of the national prohibition act. The bureau has maintained only two completely denatured alcohol formulas, and it was found that these are not being diverted for illegal use on account of the difficulty of manipulating them so that potable alcohol can be produced.

Gasoline was authorized as an alternative to kerosene in completely denatured alcohol formula No. 1, and the change proved of great value to the varnish and shellac trade. Several specially denatured alconol formulas were withdrawn and others substituted for use in certain lines of industry, and this benefited the industries involved and reduced diversion to illegal uses. One chemist in the Washington office was maintained almost exclusively to act as a liaison officer between the bureau and the trades using industrial alcohol, so that the permissive features of the law could be administered in a manner that would not hamper legitimate industry.

Alcohol Output Limited

The policy was initiated January 1, 1928, of limiting the production of industrial alcohol to the actual needs of legitimate industry. This plan called for a production of 12½ percent less alcohol than had been produced during the preceding year. Each industrial alcohol plant was allotted a fixed quota of the total alcohol to be produced, with a provision that only 40 percent of the total quota for the year could be produced during the first six months of the calendar year, provided that legitimate industries did not require an excess of that amount. This program was continued at the close of the year, as it was declared to be of great benefit to the alcohol industry and the trade in preventing an overproduction of alcohol and avoiding unstable conditions in the trade in regard to raw materials.

James E. Jones, for seven years Deputy Commissioner of Prohibition, resigned during the year, and his post has been filled since then by O. D. Jackson, previously administrator at New Orleans.

Price Maintenance Still Studied

The economic problems of price-cutting, and of chain stores with which price-cutting is usually associated, received the attention of Congress, the courts and the Federal departments during 1928.

The Capper-Kelly bill to legalize resale price contracts received a favorable report from a subcommittee of the House of Representatives, the first action taken on the bill in the dozen or more years it has been before Congress. Further action was held up pending a report from the Federal Trade commission on its investigation of resale price-maintenance practices and effects.

This investigation was undertaken late in 1927 on the commission's own motion. The economics division was directed to make an inquiry regarding the maintenance of manufacturers' resale prices, both at wholesale and retail and to report to the commission on the advantages and disadvantages of resale price maintenance to manufacturers, wholesalers, and retailers, and to the consumers who ultimately buy the goods. The study also covers the costs, prices, margins, and profits of manufacturers and distributors of price-maintained and non-price-maintained goods, the relationship of advertising expenses to these items, the causes or motives for price-cutting by distributors, the effects of price-cutting on the volume of goods handled, and the effects of price-cutting, either in eliminating manufacturers and distributors from business, or in multiplying the number of distributors, or other effects. Suggestions for any legislation that may be needed on the subject were also asked.

Trade Board Seeks Data

The commission's staff has been busy with this investigation throughout the year. Schedules and questionnaires were sent to thousands of manufacturers, wholesalers, and retailers of price-maintained and non-price-maintained goods. A large amount of fieid work was done by agents of the commission in studying the policies and prices of different classes of traders and in assisting in securing the return of questionnaires. Many consumers and professional men were also sent questionnaires asking information on price-cutting. At the close of the year most of the information sought was in the hands of the commission and clerks were busy tabulating the returns in the hope of making a report to Congress before the adjournment of the session.

This investigation came close to being cut off short early in its course. The appropriations committee of the house, in bringing in the annual appropriation bill for the Federal Trade Commission in January, included a recommendation that none of the money was to be used in making economic investigations unless specifically directed by Congress. The proviso was particularly directed at the resale price investigation, although other economic studies had been ordered by the commission. Opponents of the investigations declared that they interfered with business, cost huge sums of money, did nothing to stop law violations, and resulted in reports several years late. The majority of Congress thought otherwise, however, and through the efforts of those who look with favor on the price-maintenance study, the commission was given the necessary funds and left unhampered in its economic studies.

The expectation that the Trade Commission's report would be completed soon prevented advocates of the Capper-Kelly bill from insisting that it be taken up in Congress at once. The bill has been before the house committee on interstate and foreign commerce and was referred to a subcommittee of five members. This subcommittee held no hearings on the bill, having held extensive hearings on a similar bill two years ago, but considered it in executive session and in May sent it back to the full committee with the recommendation that the committee report it favorably to the house. One member of the subcommittee opposed the bill in part, declaring that the public is not interested in protecting profits, and he suggested that the bill fix the margins for resale contracts. The other four members, however, believed that the bill would be in the public interest and would insure fair prices.

The bill provides that it shall not be considered a violation of the anti-trust laws for a manufacturer to sell to a dealer under a contract binding the dealer to resell the goods at a stipulated price, provided that the goods bear a name or trademark, and that they are in fair and open competition with other goods of the same general class.

Advocates of the bill believe that the full committee will approve it as soon as the Trade Commission renders its report unless this report is definitely hostile to such legislation, such hostility not being expected. They have been quietly making a canvass of members of Congress to secure their support for price-maintenance legislation, and during the last general election they urged all local druggists and others interested to pledge their representatives in favor of the Capper-Kelly bill.

Chain-Store Methods Studied

Meanwhile another phase of the recent marketing developments was taken under study by the Federal Trade Commission, this time by direction of the Senate. A resolution was passed in May asking the commission to make a thorough study of the chain-store method of doing business. Due to the comprehensiveness of the problem, the commission was not able to proceed with this study rapidly at first, but by the close of the year had mapped out the course of the inquiry and had it well under way.

The investigation was asked by the Senate for two purposes:—(1) to ascertain the application of the Federal anti-trust laws to the growth of chain stores, and (2) to provide the Senate and the general public with facts about the chain-store system and its position in the economic structure. As to the first objective, the Senate directed the Trade Commission to undertake an inquiry into the chain-store system of distribution and marketing as conducted by manufacturing, wholesaling, retailing, or other types of chain stores, and to ascertain the extent to which such consolidations have been affected in violation of anti-trust laws, if at all; the extent to which consolidations or combinations of such organizations are susceptible to regulations under the Federal anti-trust laws, if at all; and what legislation, if any, should be enacted for the purpose of regulating and controlling chain-store distribution.

The Senate coupled with this request a request for information which requires a detailed and nationwide study of all types of chain stores and their activities. Some of the questions are the extent to which the chain-store movement has tended to create a monopoly or concentration of control in the distribution of any commodity, either locally or nationally; evidence indicating the existence of unfair methods of competition in commerce or of agreements, combinations, or conspiracies in restraint of trade involving chain-store distribution; the advantages or disadvantages of chain-store distribution in comparison with those of other types of distribution as shown by prices, costs, profits and margins, quality of goods and services rendered by chain stores and other distributors, or resulting from integration, managerial efficiency low overhead, or similar causes; how far the rapid increase in the chain-store system of distribution is based on actual savings in costs of management and operation and how far on quantity prices available only to chain-store distribution or any class of them; and whether quantity prices are illegal or should be curbed by Federal legislation.

In addition to rounding up such economic facts, the commission must also try to uncover evidence of the dark tales that have been circulated about chain stores, and such things as selling at a loss, substitution of goods, dealing in seconds, threatening manufacturers, secret price rebates, free goods or allowances, and similar charges that have been laid at the doors of chain stores.

Basis of Probing Laid

To date the investigation has been conducted solely through field work, interviews, personal letters and research on material gathered by other

agencies. In this way the commission's staff is accumulating a store of information about chain-store methods. As the work goes on, the answers to some of the questions become fairly evident, while other problems take form and stand out as of sufficient importance to warrant much attention. So far, most of the investigation has been to determine the sources of the information sought, the best ways to approach these sources and the relative values of different ways of attacking the problems. Although much valuable information has been obtained in this way, the bulk of the work done so far has been in the nature of experimenting on methods to be applied later on in a large scale.

Another branch of the Federal government, the Bureau of Foreign and Domestic Commerce of the Department of Commerce, became interested in the fight of the chain store and the independent retailer for the fancy of the consumer. This bureau undertook a series of studies of retail merchandising, designed to show the independent how he can eliminate waste, stop losses, and make money in face of severe competition. The results of a preliminary survey of the field were published in a booklet called "Practical Aids to the Independent Merchant," which aroused a great amount of interest among retailers in all lines.

Toward the close of the year the Supreme Court of the United States declared unconstitutional a Pennsylvania law prohibiting corporations from opening drug stores unless all stockholders in the corporation were registered pharmacists. This law was aimed at the expansion of chain drug stores, and it was contested by the Louis K. Liggett Company. The Supreme Court declared that earlier laws adequately safeguarded the public health by placing restrictions on drug stores and requiring that they be managed by licensed pharmacists, but said that no professional skill is required for ownership of a drug store and that the State went beyond its authority in attempting to limit drug-store ownership.

Petroleum Conservation Progress

Definite recommendations regarding State and Federal legislation marked the work of the Federal Oil Conservation Board during 1928.

Toward the close of 1927 the chairman of the board, Dr. Hubert Work, the Secretary of the Interior, anticipated legislative proposals to permit petroleum production agreements and suggested co-operative study of the problem by interested parties. Acting on this suggestion, a Committee of Nine was formed, composed of three members from the American Petroleum Institute, three from the American Bar Association and three from among high officials of the Federal government.

This Committee of Nine met January 23 for public hearings to receive any suggestions which might be made by any one interested. Some two score proposals were made to the committee, only one of which was presented orally, and the committee spent many days in executive session considering the plans. February 6 the committee announced its draft of proposed legislation to promote the conservation of petroleum and natural gas, together with its report to the Federal Oil Conservation Board. The committee then adjourned indefinitely, subject to the call of the board. The board has never taken action on the committee's report beyond releasing it to the public.

Conservation Steps Recommende

The committee's recommendations were:—

Federal legislation which shall (a) unequivocally declare that agreements for the co-operative development and operation of single pools are not in violation of the Federal antitrust laws; (b) permit, under suitable safeguards, the making, in times of over-production, of agreements between oil producers for the curtailment of production:

Similar legislation by the various oil-producing States;

Immediate further study into the matter of the waste of natural gas, in order that legislation may be formulated which will forbid such waste as fully as may be done without working injustice and unreasonable hardship;

Legislation by Congress granting the Secretary of the Interior authority to join and to permit lessees from the government to join in agreements for the co-operative development and operation of single pools;

The passage by Congress of the legislation heretofore recommended to it by the Secretary of the Interior, removing the existing mandate upon him to offer for lease annually, regardless of conditions, 100,000 acres of Osage Indian lands.

Regarding privately owned lands, the committee said, in part:—

We take it that true conservation does not mean the withholding from present use of the nation's natural resources. It does mean that these resources should be drawn upon without waste and in orderly response to the economic needs of the country. We have devoted attention to ascertaining to what extent and in what manner waste occurs in the production and use of oil, and to how and why the production of oil is not in orderly response to the country's economic demand for it.

So far as concerns waste of oil, the evidence is conclusive that there is no substantial waste after the oil is once produced. When it is once out of the ground it is practically all put to beneficial uses, the character of the uses and the amount consumed by each being determined by economic factors. The only exception to this is at times of overproduction, when excessive quantities of oil are carried in storage. There is an unavoidable loss of oil at such times, due to the dissipation of the more volatile elements. There is also a decided economic loss incident to the storage. There exists possibly something of a public impression that there is a considerable loss of oil through the failure at times to capture and confine the oil as it comes from the well, particularly from a gusher well. This impression, if it exists, is incorrect. The amount of oil lost is so small as to be negligible for all practical purposes.

On the other hand, there is what for practical purposes is a distinct waste in the process of getting the oil out of the ground. It consists in the failure to recover from the sands in which the oil occurs the full proportion of the oil content that is susceptible of recovery by the most efficient and yet practical methods of production.

As to the production of oil in orderly response to the economic needs of the nation, the fact is that in a very marked degree production has had no relation to economic needs.

Primary Cause of Waste

The primary and most important cause, both of the failure to recover the full recoverable proportion of the oil content and of production at recurring periods out of all proportion to the demand, is not far to seek and is the same. It consists in the law governing the right of the owner of the land to recover oil from it. The law is that the owner of land has the right to recover from his land all the oil that can be produced therefrom, regardless of whether that oil was originally in place in his ground or has been caused to flow from the ground of others by his action in opening and operating a well on his property. There is no property, in the strict sense, in the oil until it is recovered, any more than there is in underground water, and the oil belongs to him who first gets it. The result is that when an oil field is once opened, it is a race between all the owners in the field to recover all each can. It is a race in which they must take part, willy-nilly, or else lose what otherwise they might obtain. It is a race which can be avoided only by the joint action of every one in the field.

The intensity of the race is increased by the function which natural gas plays in the process of production. Since gas is the most important factor in detaching the oil from the sands and bringing it to the well and, in case of flowing wells, to the surface, and since, also, the oil content is common to the whole field—using field in the sense of a single deposit or pool—the release of gas through one well affects all the other wells in the same field.

Gas Pressure Dissipated

The result is twofold unless all the owners in the field unite in a common plan of the development and operation of the field. The first is that the gas content is largely dissipated and lost for the benefit of the few wells which first tapped the oil-bearing strata and for the field as a whole the recoverable proportion of the oil content seriously reduced. Herein lies by far the most important cause of the failure in actual practice to recover the full recoveroble proportion of the oil content.

The second result is that, when once a field is opened, it is not possible for any owner or operator in it to do anything but drive on with all speed to secure from his land all the possible oil at the earliest possible moment. He can not wait because of market conditions or anything else.

Meeting these conditions, one thing which immediately suggests itself is the co-operative development of any single field by its owners and operators. By single field we mean a single pool or deposit wherein the operations of one owner affect his neighbors. By such co-operative development the most important result can be had of conserving the gas content and utilizing it to the fullest possible extent and for the benefit of the whole field. The doing of this should increase greatly the total actual recovery from the field. So far as preventing the present waste in failing to recover the full recoverable proportion of the oil content of the oil-bearing sands, we regard the method of co-operative development and production of single fields as the most effective remedy.

The difficulty lies in bringing this about. Theoretically, it can be brought about either by voluntary agreement of all the owners or operators in the particular field or, disregarding possible constitutional difficulties, by the coercive power of the State. For the present, at any rate, we do not believe that any such drastic and difficult expedient should be attempted as that of imposing on the owners and operators of a field, or even a small minority of them, some plan to which they do not all agree. The matter is one to be brought about by voluntary agreement, if possible. In bringing it about, the State should remove any unnecessary obstacles in the way and bring to bear what pressure it reasonably can. This brings us to our first recommendation.

Co-operation Handicapped

One great difficulty which has stood in the way of voluntary agreements for co-operative development and operation is the fear that such agreements may be held to be in violation of the so-called "antitrust" laws, both Federal and State. An almost necessary feature of any co-operative plan is the control of production, and because of this feature the fear has arisen. We do not believe the fear to be well founded. It seems clear to us that any agreement for the co-operative development and operation of a single pool, even though it involve the control or curtailment of production from that pool, is not a contract or agreement in violation of any antitrust law, either State or Federal. Nevertheless, the fear exists and has been a serious deterrent to the making of co-operative agreements. It should be removed. We, therefore, recommend that both Congress and the legislatures of the oil-producing States be asked to pass legislation which will unequivocably remove such agreements from the purview of laws forbidding restraints on commerce.

It is distinctly in the public interest that agreements between oil producers for the curtailment of drilling and production be permitted at times when serious overproduction exists or is immediately threatened. It is a permission that should be confined to those times as an emergency expedient, so to speak, should end when the emergency ends, and should in general be carefully safeguarded.

We are agreed that, in general, the waste of gas should be forbidden by law. We are likewise agreed that suitable legislation to this end is the most important affirmative step to compel conservation that can be taken. Such legislation, if properly devised, will, we believe, not only prevent waste existing at the present time, but will have a decided effect in inducing agreements for the co-operative development and operation of oil fields, and such co-operative development and operation constitutes, we believe, the most important means of fully utilizing and conserving in the true sense our oil resources.

But we are unable for the present to determine just the form that such legislation should take. Ill-advised legislation, no matter how well intended, might do great injustice; for example, we doubt exceedingly the wisdom of legislation which would simply forbid without any exception the escape of any gas not put to beneficial use after leaving the well. Conditions in the various fields differ so greatly and actual development has proceeded so far under present practices that an inflexible rule such as that just mentioned might well mean that some fields would have to be shut down. Any measure compelling conservation will affect some interests adversely, and the mere fact that it does so is not a sufficient reason for not adopting it. But, if the measure is too drastic as applied to existing conditions and is so harsh as to work grave injustice, it defeats itself in actual operation and runs the danger at least of being unconstitutional.

The legislation, furthermore, is legislation which must be adopted by the States. In our judgment, legislation regulating or forbidding the waste of natural gas is primarily within the police powers of the individual States and at least under present conditions not within the powers of the Federal government.

Government Must Join

Regarding government-owned lands, the committee said:—

With respect to both public and Indian lands, it is doubtful whether the Secretary of the Interior would have authority to join, or permit lessees to join, in the co-operative development and operation of a pool. He should have this authority, and the committee recommends that Congress be asked to enact legislation to this end. It might also be well, to remove any doubt which may exist as to this authority, to include in such legislation provisions authorizing cessation of drilling and of production during periods of over-production, in the discretion of the secretary and with the consent of other parties interested in the leases or deposite.

Soon after making public this report, the Federal Oil Conservation Board sent letters to the governors of the twenty oil-producing States asking expressions of opinion as to the possibility or probability of all the oil-producing States uniting upon uniform State legislation. Some of the governors replied and some did not, but the board has not announced whether or not valuable suggestions were contained in the replies received.

Problems referred to by the Committee of Nine, particularly the recovery of a larger proportion of the oil from the sands, were studied by the board's technical advisors with a view of having definite recommendations for incorporation in legislation or regulations governing the subject.

Oil from Other Sources

Definite progress was made during the year on reports which the board undertook at its creation. The second report of the board was made to the President in January. It dealt with possible petroleum substitutes and the development of shale oil. While not lengthy, this report was quite comprehensive and contained both a popular and a technical discussion of substitute motor fuels, the general conclusions being that, in the present state of the art and under present economic conditions, there is little hope that other fuels will replace gasoline in the near future. The report dealt with the production of oil from coal, from shale, and from lignite; the use of alcohol from various plants and the use of agricultural dusts and flours in internal combustion engines; the utility of electric storage battery automobiles, and the progress toward increased economy in the use of petroleum products.

The year saw the virtual completion of the third report of the board, covering petroleum supplies of the entire world. It is expected that this report will be the most complete report ever issued in any country on the subject of oil reserves, production and demand. Research workers of the board have been gathering data in all the capitals of the world for several years.

Petroleum Lease Litigation

Much litigation and investigation, but little in the way of actual results, marked the year's course of the lingering aftermath of the oils frauds of the Harding administration when Albert B. Fall was Secretary of the Interior and Harry F. Sinclair and Edward L. Doheney and their associates negotiated huge deals involving petroleum from government reserves.

At the close of 1927, the trial of Fall and Sinclair on charges of conspiracy to defraud the government in connection with oil leases ended in a mistrial when it was found that detectives employed by Sinclair had shadowed jurymen. Sinclair and his associates were given varying sentences for contempt of court. These sentences were appealed early in 1928, but the appeals were not finally passed on during the year.

A new trial of Fall and Sinclair was ordered in the Supreme Court of the District of Columbia, but Fall was sick at his Texas home and was unable to appear. Government attorneys visited him and took some testimony, and representatives of a Senate investigating committee also attempted to question him, but while he said he was ready to tell everything, Mr. Fall declined to bare his story except in court. The court then ordered that Sinclair must stand trial alone. Congress passed a bill granting immunity to E. T. Everhart, son-in-law of Fall, permitting him to testify in the trial. He previously had refused to testify on the grounds that he might incriminate himself. The trial opened April 9 and continued until April 21, when a jury found Sinclair not guilty of conspiracy to defraud the government.

Meanwhile, the Senate Public Lands Committee decided to reopen its investigation of the leasing of the naval reserve at Teapot Dome, Wyoming, particularly with regard to the profits of the now extinct Continental Trading Company, a Canadian corporation in which Sinclair was interested, which was believed to have figured in the alleged transfer of $230,000 in Liberty bonds from Sinclair to Fall when the latter was Secretary of the Interior. It was declared that this corporation was organized to purchase oil from the naval reserve at $1.50 per barrel and sell it at $2.50 per barrel to Sinclair's company and to the Standard Oil Company of Indiana.

Answers Were Refused

The principal witness in this investigation was Robert W. Stewart, chairman of the board of the Standard company, but he refused to answer certain key questions put by the committee regarding the disposition of the Continental's profits. His excuse was that he was under subpoena as a witness in the court trial of Fall and Sinclair, and that he believed his testimony should be given first to the court. For this refusal the Senate ordered his arrest, and he was placed on trial in the Supreme Court of the District of Columbia on charges of contempt of the Senate. June 14, a jury acquitted Mr. Stewart of the charges. Mr. Stewart was also indicted for perjury for giving conflicting testimony in two appearances before the Senate committee, but was acquitted by a jury on the ground that a quorum of the committee was not present at the time of the conflicting testimony.

The Senate committee continued its attempts to uncover details of the Continental Trading Company's transactions after the failure to get the desired data from Mr. Stewart, but did not have a great deal of success. John D. Rockefeller, jr., was called as a witness, but was unable to give the committee much information. Because of the disclosures of the committee regarding the Continental firm, Mr. Rockefeller publicly asked Stewart to resign as a director in the Standard of Indiana, and when Stewart refused he undertook to force him out of the company. The investigating committee also called Andrew W. Mellon, the Secretary of the Treasury, when it was learned that Sinclair gave the Republican National Committee some $160,000 in Liberty bonds to wipe out a campaign deficit.

Sinclair told the committee that he had received $757,000 of the profits of the Continental Trading Company, but that just before the committee hearing he had returned it with interest to the Sinclair Crude Oil Purchasing Company. He said he had received Liberty bonds representing these profits from Henry M. Blackmer, chairman of the board of the Midwest Refining Company. For the last five years

Blackmer has been in self exile in France, and he has refused to answer a court summons, although cited for contempt and having his property confiscated for failure to appear. The government of France refused to extradite Blackmer on the ground that the trial in which he is wanted as a witness and the contempt proceedings against him are political.

Salt Creek Contract Voided

Before the Teapot Dome investigation was ended the Senate public lands committee took up another trail, the renewal of the contract with the Sinclair Crude Oil Purchasing Company for the sale of government royalty oil in the Salt Creek field, Wyoming. This contract had been made by Albert B. Fall when Secretary of the Interior, and was renewed February 20, 1928, by Secretary Hubert Work. The White Eagle Oil & Refining Company lodged a formal protest against this renewal, but Secretary Work, on advice of the solicitor of the Department of the Interior, declared that he had no option but to renew the contract, since it contained a clause giving the company the right to renew if it chose.

While the Senate committee was investigating the matter, the Attorney-General undertook a study of the contract at the direction of President Coolidge, and, October 17, issued an opinion that the entire contract was void because the renewal clause was not mentioned in the specifications and was not the basis on which competitors bid. The contract was terminated immediately and new bids advertised. The royalty oil was then sold to the Texas Company and the White Eagle Oil & Refining Company at a price materially higher than that paid by the Sinclair concern.

A similar situation was found regarding the renewal of the contract for the sale of royalty oil from the Cat Creek, Montana, field to the Lewiston Oil & Refining Company, and this contract was similarly cancelled and readvertised.

Teapot Dome Field Closed

The lands in the Teapot Dome naval reserve which had been leased to the Mammoth Oil Company were returned to the jurisdiction of the government during the year in accordance with the decision of the Supreme Court of the United States in 1927 that the lease was invalid. The Teapot Dome field was shut in by the navy and the equipment sold. The government sued the Mammoth company, one of Sinclair's concerns, for upward of $1,000,000 for oil taken from Teapot Dome under the voided contract, and obtained a judgment, but the Mammoth company was unable to pay. As the oil had been sold to the Sinclair Crude Oil Purchasing Company, the government opened suit against this concern in an attempt to collect this judgment.

An earlier conviction of Sinclair for contempt of the Senate for refusing to answer questions put by an investigating committee was appealed to the Court of Appeals of the District of Columbia, but remained there without action until near the close of the year, when this court asked the Supreme Court of the United States to pass on certain questions of law. The Supreme Court first took up these questions and then decided to review the entire case.

Earlier in the year it became known that petroleum from the naval oil reserve No. 2, Elk Hills, California, was being sold by the lessee, the Honolulu Consolidated Oil Company, to the foreign-owned Royal Dtuch Shell Company. Alarmed at this situation, the navy appointed a special board of admirals to investigate, and this board recommended that legislation be enacted to surround the naval reserves with the same provision that prevents leasing Indian lands or the public domain to foreign concerns, with the added restriction that oil produced from the leases shall not pass into foreign hands. A bill embodying these suggestions was introduced in the House, but did not receive committee approval during the year.

Muscle Shoals Status Unchanged

Ten years after the Armistice the government's war-built nitrate plant on the Tennessee river still stands idle while Congress tries in vain to find a satisfactory way of disposing of the valuable Muscle Shoals properties.

A plan for government operation of the plants was passed by Congress during 1928 (the first time any Muscle Shoals measure has won approval in both houses) only to meet the veto of President Coolidge. The validity of the President's action, which was expressed through a pocket veto, has been questioned, but will soon be decided by the supreme court in a similar case. Meanwhile, the status of the plants is the same as it was ten years ago—a valuable waterpower development partially operated under temporary authority and a huge investment in an idle and obsolescent nitrogen-fixation plant.

Last Spring Congress had before it half a dozen bills for the disposition of Muscle Shoals. Prominent among these was the Madden bill, under which the properties would be leased to the American Cyanamid Company. The Secretary of Agriculture, W. M. Jardine, proposed that the electric power be sold and the money used for experimentation with modern nitrogen-fixation processes and in the application of fertilizers to the soil.

Senator George W. Norris of Nebraska, who has long been identified with Muscle Shoals, early brought out a plan for government ownership and operation of the hydro-electric plants at Muscle Shoals. He agreed that the arc process of nitrogen fixation for which the nitrate plants are equipped was obsolete and proposed to abandon them. His chief interest was government operation of power plants, and he led a fight that ended in the senate passing his bill.

Government Manufacture Urged

In the house, the military affairs committee held many executive sessions over the Norris bill, the plan of the Department of Agriculture, the Madden bill, and other plans before it, and finally announced that it could not approve of any of them. The committee thereupon drew up its own bill, which it reported to the house as an amendment to the Norris bill but without ever holding hearings on the plan. The committee bill was like nothing that had been proposed before and was revolutionary in principle. It would, in short, place the Federal government in the business of making and distributing at retail, at cost, all sorts of mixed concentrated fertilizers.

The bill created a corporation with $10,000,000 capital stock subscribed by the United States Treasury, directed by a board of five members, none of whom was to have any financial interest in the fertilizer business. The corporation was to make nitrogen at Muscle Shoals, selling only surplus electric power, and was to produce or purchase other fertilizer ingredients so as to turn out complete plant foods. The products of the corporation were to be sold at low cost, but as much as one-fourth the annual production could be distributed free for demonstration purposes. The corporation was given access to all patents which it might need, the owners being permitted to sue for royalties.

Immediate opposition to this bill was raised from all parts of the country, but particularly by the fertilizer industry. Fertilizer manufacturers saw in this bill a plan which would put them out of business entirely, at least in large areas. They predicted that government funds would be poured into the plant without adequate return, so that, regardless of the efficiency of the plants, the cost of the product would be figured at a basis so low that no commercial plant could compete in price. The National Fertilizer Association was quick to see the disaster lurking in the bill and sent out letters and broadsides to all its members urgently calling on them to come to the capital and fight for their lives. The manufacturers came and fought. They circularized Congress and spent many days lobbying against the bill, telling their own congressmen and others who would listen that the bill was socialism and would ruin the fertilizer industry.

Congress Favors Farmers

But their efforts were unavailing. the house was tired of having the Muscle Shoals problem on its doorstep and wanted to do something to get rid of it, and leaders of the farm group declared that here was a plan which would really help agriculture by giving cheaper fertilizer. After two days of tumultuous debate the house passed the bill May 16, but amended it so that the government corporation was to make and sell fixed-nitrogen products instead of complete fertilizer.

The bill then went to the senate, where Senator Norris again insisted on his plan for government operation of Muscle Shoals as a power project. This was debated for a day, when Senator Norris saw a deadlock was inevitable and withdrew his plan. The measure then came before the senate in the form in which it passed the house. Opponents of government in business attempted to block the bill, and they were aided by the senators from Tennessee, who declared that the bill did not give proper recognition to the rights of their State to the waters of the Tennessee river. A filibuster began which lasted for two days, but the minority was forced to give up the fight, and the bill was passed with only a few changes regarding the details of the corporation's administration.

The bill was promptly sent to President Coolidge and Congress adjourned soon after. The ten days given the President by the constitution in which to sign or veto bills passed by Congress were eagerly counted by those interested in the bill. But they elapsed without any action being announced at the White House. Months later the bill was found in the files with the word "pocketed" written across it.

The general consensus of opinion, including the administration, was that the bill is as dead as though the President had written "vetoed" on it and sent it back to Congress. Senator Norris, however, insisted that the bill **had become law. In this he differed** from most legal authorities, though the question has never been finally decided. The constitution says that the President must act on bills within ten days. If not they become law without his signature, unless Congress, by adjournment, prevents the return of a bill, in which case it shall not become law. Senator Norris and some others contend that this provision means only the adjournment of Congress at the end of its existence, that is on a March 4, and does not apply to the adjournment of a session for a summer recess, as was the case when the Muscle Shoals bill was pocketed.

Some study of the status of the Muscle Shoals bill was given by both houses of Congress and by the Attorney-General, but no definite conclusions were reached. All precedents are to the effect that bills thus pocketed are dead. Definite action, however awaited a case pending in the Supreme Court of the United States which involves a bill treated exactly like the Muscle Shoals bill. The Okanogan and other tribes of Indians in the State of Washington claimed that a bill permitting them to sue in the court of claims became a law even though pocketed at the close of a session. The court of claims ruled that the bill did not become law. At the close of the year the supreme court had not taken the appeal under review.

Nitrogen Output in 1927

According to data collected at the 1927 biennial census of manufactures, nitrogen and fixed nitrogen compounds (not including those made and consumed by the same establishment) to the aggregate value of $24,253,798 were produced by establishments engaged primarily in the manufacture of chemicals. This total represents a decrease of 18.2 percent as compared with $29,659,414 for 1925, the last preceding census year.

The items which make up the total for 1927 are as follows:—Aqua ammonia 46,102,198 pounds, valued at $1,241,100; anhydrous ammonia, 45,233,020 pounds, $4,030,496; ammonium sulphate, 12,077,581 pounds, $259,589; other ammonium compounds $6,029,266; cyanogen compounds, $6,779,032; nitric acid, 28,722 tons, $3,559,436; nitrous oxide, 65,625,000 gallons, $798,318; other nitrogen compounds and gaseous nitrogen, $1,556,561.

These figures do not cover alkaloids, coaltar derivatives, pyroxylin, rubber substitutes, explosives, nor ammonia products of the coke and manufactured-gas industries.

The statistics for 1927 and 1925 are summarized in the following table:—

	Year	Number of establishments	Unit of measure	For sale: Quantity	For sale: Value
*Aggregate value	1927	..	.....	.....	$24,253,798
*Aggregate value	1925	..	.....	.....	29,659,414
Ammonium compounds, total value	1927	..	.....	.....	11,560,451
Ammonium compounds, total value	1925	..	.....	.....	15,068,005
Ammonia, aqua	1927	11	pound	46,102,198	1,241,100
Ammonia, aqua	1925	17	pound	66,227,955	3,027,474
Ammonia, anhydrous	1927	16	pound	45,233,020	4,030,496
Ammonia, anhydrous	1925	16	pound	31,724,858	6,771,876
Ammonium sulphate	1927	10	pound	12,077,581	259,589
Ammonium sulphate	1925	10	pound	5,708,984	153,134
†Other ammonium compounds, value	1927	..	.....	.....	6,029,266
†Other ammonium compounds, value	1925	..	.....	.....	5,115,521
Cyanogen compounds, total value	1927	..	.....	.....	6,779,032
Cyanogen compounds, total value	1925	..	.....	.....	6,663,988
Ferric ferrocyanide (Prussian blue)	1927	19	pound	4,104,233	1,364,537
Ferric ferrocyanide (Prussian blue)	1925	26	pound	4,971,486	1,619,509
Sodium and potassium ferrocyanides and sodium, silver, and other cyanides, value	1927	..	.....	.....	4,335,725
Sodium and potassium ferrocyanides and sodium, silver, and other cyanides, value	1925	..	.....	.....	4,156,378
Hydrocyanic acid	1927	6	pound	2,283,395	1,078,770
Hydrocyanic acid	1925	7	pound	2,288,598	888,101
Nitric acid	1927	50	ton	28,722	3,559,436
Nitric acid	1925	53	ton	26,852	3,559,695
Nitrous oxide	1927	9	gallon	65,625,000	798,318
Nitrous oxide	1925	10	gallon	54,882,000	729,534
Other nitrogen compounds and gaseous nitrogen, value	1927	..	.....	.....	1,556,561
Other nitrogen compounds and gaseous nitrogen, value	1925	..	.....	.....	3,638,192

* Not including alkaloids, coaltar derivatives, pyroxylin, rubber substitutes, explosives, nor ammonia products of the coke and manufactured-gas industries.

† Principal compounds named in order of value for 1927:—Phosphates, chloride, carbonates, nitrate, bifluoride, etc.

Lime Sales Decreased in 1928

Sales of lime by producers in the United States in 1928 amounted to 4,395,000 short tons, valued at $36,600,000, according to estimates furnished by lime manufacturers to the United States Bureau of Mines. This is a decrease of less than 1 percent in quantity and 5 percent in value as compared with sales of 4,414,932 tons, valued at $38,638,413, in 1927. The estimated sales of hydrated lime, which are included in these figures, amounted to 1,568,000 tons, valued at $13,395,000, a decrease of 2 percent in quantity and 8 percent in value from 1,596,906 tons, valued at $14,581,695, produced in 1927. The average unit value of all lime showed a decrease from $8.75 a ton in 1927 to $8.33 in 1928.

Conditions in the lime industry during 1928 were reported as unsettled, and it is difficult to determine whether the estimated small decrease shown above will be augmented or eliminated by later complete and accurate returns. Reports indicate that lime for construction, sales of which amounted to 2,148,840 tons, valued at $20,962,759, in 1927, will show a decrease in 1928, possibly to around 1,950,000 tons. Demand was reported by some producers of building lime as better in 1928 than in 1927, but a large number of producers reported it as the same or from 10 to 25 percent less than in 1927.

Chemical lime in most cases was reported in equal or increased demand. The sales of this product in 1927 was 1,943,199 tons, valued at $15,437,783. For 1928 the estimated production is 2,100,000 tons. Included in chemical lime, the sales of refractory lime (dead-burned dolomite) in 1928 were estimated by the producers at 447,400 tons, compared with 374,415 tons, valued at $3,459,803, in 1927, an increase of 19 percent in quantity.

Lime for agricultural use seemed in fair demand, with the output estimated at 345,000 tons, somewhat more than the output for 1927, which was 322,893 tons, valued at $2,237,871.

Ohio, the leading State in lime production, apparently increased its production by 3 percent, and Pennsylvania, the second State, decreased about 2 percent in total output. There was a small decrease indicated in the output of hydrated lime in Ohio and a corresponding decrease in the hydrated lime produced in Pennsylvania.

The accompanying table compares the estimated sales of lime by the producers in 1928, by States, with the sales in 1927:—

	1927: Hydrated lime, Short tons	1927: Total lime, Short tons	1927: Total lime, Value	1928 (estimated): Hydrated lime, Short tons	1928 (estimated): Total lime, Short tons	1928 (estimated): Total lime, Value
Ohio	702,246	987,726	$9,497,324	677,000	1,015,000	$8,982,000
Pennsylvania	264,491	813,571	6,105,241	260,000	800,000	6,000,000
Missouri	84,402	267,776	2,189,420	98,100	301,000	2,263,000
West Virginia	44,646	244,950	1,643,109	*	285,000	1,763,000
Alabama	31,055	206,010	1,566,287	25,000	193,000	1,441,000
Tennessee	57,609	181,385	1,266,326	56,000	181,000	1,113,000
Virginia	64,132	178,426	1,317,581	66,000	167,000	1,189,000
Wisconsin	13,698	197,667	1,733,009	12,000	164,000	1,245,000
Massachusetts	19,955	189,343	2,325,031	19,100	163,000	1,954,000
Maine	*	116,566	1,230,356	*	122,000	1,240,000
Illinois	29,909	115,803	1,084,093	33,000	114,000	986,000
Michigan	17,303	101,172	931,597	20,100	110,000	1,008,000
Indiana	44,183	116,171	830,527	40,000	97,000	676,000
New York	37,842	98,071	905,116	35,000	92,000	775,000
Texas	33,749	80,796	733,678	35,000	82,000	746,000
California	11,965	64,934	708,010	15,300	58,000	634,000
Maryland	28,747	55,405	439,457	28,000	54,000	425,000
Vermont	10,571	61,024	633,440	10,000	53,000	493,000
Connecticut	*	53,304	608,550	*	48,000	505,000
Utah	*	48,382	397,088	*	45,000	370,000
Arizona	*	41,859	390,074	*	40,000	384,000
Arkansas	*	25,375	207,335	*	39,500	332,000
Washington	*	23,959	382,294	*	34,000	700,000
Undistributed	100,403	134,757	1,363,470	138,400	137,500	1,376,000
Totals	1,596,906	4,414,932	$38,638,413	1,568,000	4,395,000	$36,600,000

* Included under "Undistributed."

57-Year Record of Exports from the United States, 1871-1928

The following tables, compiled from official records, give export data, quantity and value, for fiscal* years to June 30, for all years for which figures are available, down to 1928:

*Figures for 1923 and 1924 revised in 1926 issue from calendar year records previously given

Absorbent Cotton, Gauze, and Surgical Dressings

	Pounds.	Dollars.
1925	2,965,413	2,093,420
1926	3,013,678	2,243,161
1927	3,204,808	2,226,210
1928	3,228,863	2,193,103

Abrasives, Artificial, Steel Wool, Abrasive Paper, Etc.

	Pounds.	Dollars.
1922	7,198,459	1,519,303
1923	19,744,356	3,298,195
1924	19,003,877	4,346,331
1925	23,903,264	5,098,462

Not stated after 1925.

Abrasives, Wheels, Emery and Corundum

	Pounds.	Dollars.
1891	.....	34,651
1901	.....	172,766
1915	.....	736,879
1916	.....	1,630,265
1917	.....	3,846,101
1918	.....	4,697,443
1919	.....	3,323,219
1920	.....	2,546,991
1921	.....	2,439,021
1922	2,050,502	644,151
1923	1,766,654	580,772
1924	1,696,268	569,348
1925	1,531,754	495,247
1926	1,001,291	329,253
1927	727,091	239,732
1928	676,963	245,687

Acetates, Amyl, Ethyl and Butyl

	Pounds.	Dollars.
1928	274,357	43,544

Acetone

	Pounds.	Dollars.
1928	2,942,383	239,130

Acid, Acetic

	Pounds.	Dollars.
1922	5,079,880	367,365
1923	3,633,767	290,081
1924	486,674	64,666
1925	879,288	90,536
1926	447,605	55,869
*1927	.....	.....

* Not enumerated.

1928	164,242	21,527

Acid, Boric

	Pounds.	Dollars.
1922	1,560,996	189,581
1923	1,245,660	149,950
1924	728,849	82,245
1925	762,144	78,735
1926	1,119,964	105,169
*1927	.....	.....

* Not enumerated.

1928	1,923,560	114,629

Acid, Carbolic

	Pounds.	Dollars.
1918	8,688,554	4,236,288
1919	5,810,314	2,173,171
1920	2,223,205	420,101
1921	659,890	86,297
1922	111,479	19,008
1923	232,830	34,389
1924	51,364	8,016

Not stated after 1924.

Acid, Nitric

	Pounds.	Dollars.
1918	961,494	101,040
1919	737,273	86,788
1920	820,517	105,882
1921	267,119	48,552
1922	234,736	27,587

Not stated after 1922.

Acid, Picric

	Pounds.	Dollars.
1918	53,688,240	33,902,957
1919	12,507,483	6,565,478
1920	8,073	3,430
1921	3,730	2,142
1922	466	288

Not stated after 1922.

Acid, Stearic

	Pounds.	Dollars.
1923	3,686,425	404,179
1924	2,191,052	281,313
1925	2,059,307	277,476
1926	1,108,262	168,016
1927	1,847,507	199,419
1928	2,117,451	224,446

Acid, Sulphuric

	Pounds.	Dollars.
1913	9,790,532	89,783
1914	12,131,750	125,892
1915	46,771,510	516,436
1916	82,020,246	1,990,532
1917	58,604,048	963,888
1918	67,654,722	1,119,907
1919	47,413,636	805,430
1920	32,334,393	778,287
1921	18,600,704	446,380
1922	13,979,319	265,560
1923	7,261,052	156,204
1924	10,364,010	184,335
1925	10,274,662	173,120
1926	8,244,795	158,062
1927	7,932,530	147,833
1928	7,163,281	153,712

Acids and Anhydrides, All Other

	Pounds.	Dollars.
1871	.....	57,730
1881	.....	39,240
1891	.....	121,851
1901	.....	198,233
1913	.....	364,347
1914	.....	357,035
1915	.....	2,611,741
1916	.....	22,717,335
1917	.....	54,725,124
1918	.....	5,675,707
1919	.....	4,573,969
1920	.....	5,397,987
1921	.....	3,029,332
1922	.....	1,019,671
1923	10,398,865	689,300
1924	11,391,084	704,207
1925	9,914,912	661,298
1926	12,491,377	615,292
1927	15,457,187	701,012
1928	14,829,711	704,312
	12,608,121	688,282

Alcohol, Methyl

(See Methanol)

Alcohol, Other, Pure and Denatured

	*Pounds.	Dollars.
1891	418,935	180,290
1901	237,509	97,633
1913	151,232	53,346
1914	187,845	67,728
1915	200,455	108,985
1916	24,433,243	8,784,742
1917	51,941,634	16,027,867
1918	8,351,142	4,619,878
1919	11,884,353	6,145,115
1920	27,376,167	10,455,247
1921	14,635,394	7,569,881
1922	3,180,013	943,774
1923	404,837	170,255
1924	312,187	213,298
1925	380,959	296,057
1926	473,412	291,016
1927	389,298	405,750
1928	193,713	402,413

* Quantity stated as "Gallons" prior to 1928.

Aluminum Ingots, Scrap and Alloys

	Pounds.	Dollars.
1918	21,207,641	8,611,447
1919	11,363,094	4,194,099
1920	7,834,746	2,330,073
1921	1,989,569	614,142
1922	1,442,580	282,084
1923	603,377	114,771
1924	1,533,943	317,968
1925	8,880,379	1,984,675
1926	2,296,122	511,867
1927	979,145	197,388
1928	4,506,742	935,967

Aluminum Sulphate

	Pounds.	Dollars.
1922	26,450,657	388,447
1923	31,692,679	466,810
1924	33,867,163	442,372
1925	35,737,542	437,950
1926	43,732,392	530,966
1927	43,124,764	508,236
1928	42,381,403	503,929

Ammonia and Compounds

(See also "Fertilizers")

	Pounds.	Dollars.
1922	2,747,480	990,111
1923	8,397,796	1,025,925
1924	3,440,966	899,166
1925	3,880,969	913,476
1926	4,668,581	741,389
1927	4,807,777	613,271
1928	3,762,092	350,983

Ammonia Gas

	Pounds.	Dollars.
1928	1,019,567	161,608

Anilin Oils and Salts

	Pounds.	Dollars.
1922	341,220	65,602
1923	492,087	88,248
1924	262,799	68,970
1925	634,647	133,920
1926	478,737	93,427

Not stated after 1926.

Antitoxins, Serums and Vaccines (Biologics)

		Dollars.
1924	.....	843,588
1925	.....	1,057,124
1926	.....	1,417,564
1926	.....	1,417,564
1927	.....	1,612,466
1928	.....	1,754,390

Asbestos, Unmanufactured

	Tons.	Dollars.
1917	219	21,851
1918	767	117,413
1919	520	58,448
1920	1,079	223,560
1921	711	139,918
1922	329	43,302
1923	185	24,219
1924	1,163	73,580
1925	883	87,576
1926	1,000	76,218
1927	683	60,906
1928	668	249,555

Ashes, Pot and Pearl

	Pounds.	Dollars
1871	1,474,954	103,249
1881	1,636,839	141,463
1891	430,582	24,432
1901	1,043,817	56,072

Stated as "Potash, All Other." for later years.

Asphalt and Bitumen, Natural, Unmanufactured

	Tons.	Dollars
1914	49,831	1,131,086
1915	28,555	616,240
1916	42,754	830,916
1917	34,428	712,051
1918	22,065	548,745
1919	22,754	729,662
1920	47,024	1,396,770
1921	43,630	1,290,467
1922	43,002	1,183,080
1923	66,004	1,588,001
1924	50,639	1,270,916
1925	36,866	988,946
1926	34,370	940,170
1927	40,758	1,157,090
1928	22,206	648,071

Asphalt and Bitumen, Manufactures, Except Roofing

	Pounds.	Dollars.
1914	.....	362,947
1915	.....	400,158
1916	.....	510,290
1917	.....	554,695
1918	.....	489,088
1919	.....	673,231
1920	.....	682,753
1921	.....	781,947
1922	29,514,018	890,925
1923	43,664,167	633,379
1924	66,050,928	1,112,974
1925	90,155,525	1,506,798
1926	67,049,651	1,204,546
1927	56,487,695	1,193,613
1928	51,876,525	970,339

Baking Powder

	Pounds.	Dollars.
1901	822,540	292,081
1914	2,725,964	790,274
1915	3,376,780	881,879
1916	3,969,985	880,118
1917	4,836,844	1,028,352
1918	6,022,402	1,838,806
1919	4,257,487	1,257,805
1920	5,595,126	1,648,906
1921	3,491,666	1,229,400
1922	3,612,397	1,496,446
1923	4,061,789	1,773,005
1924	3,930,204	1,622,749
1925	4,274,684	1,628,120
1926	4,084,663	1,500,125
1927	4,790,031	1,791,860
1928	5,122,950	1,775,224

Bauxite and Other Aluminum Ores and Concentrates

	Tons.	Dollars.
1915	11,949	531,404
1916	19,317	929,909
1917	18,495	1,118,777
1918	21,313	1,463,842
1919	18,187	1,397,200
1920	20,890	1,702,390
1921	13,081	1,066,732
1922	19,617	961,208
1923	49,234	2,312,344
1924	81,833	3,765,069
1925	78,286	4,042,557
1926	81,877	4,142,048
1927	107,930	6,742,126
1928	122,489	6,964,234

Beeswax

	Pounds.	Dollars.
1881	164,090	49,238
1891	120,548	30,027
1901	140,276	39,464
1914	96,215	27,292
1915	181,328	57,971
1916	147,772	48,252
1917	383,667	131,691
1918	189,871	68,117
1919	134,508	67,237
1920	641,357	287,051
1921	189,616	80,497
1922	100,674	27,699
1923	79,404	25,187
1924	136,080	42,311

Not stated after 1924.

Benzol

(See "Coal Tar Distillates.")

Bleaching Powder

(See "Lime, Chlorinated")

Bones, Hoofs, and Horns, Unmanufactured

	Pounds.	Dollars.
1871	.....	55,629
1881	.....	73,807
1891	.....	335,710
1901	.....	218,680
1913	.....	102,705
1914	.....	61,180
1915	.....	16,182
1916	.....	37,558
1917	.....	39,804
1918	.....	338,642
1919	.....	330,677
1920	.....	374,136
1921	.....	118,021
1922	5,297,306	261,292
1923	6,300,654	310,152
1924	5,457,207	285,664
1925	4,188,698	152,236
1926	2,509,345	103,228
1927	1,974,935	79,766
1928	2,861,068	107,830

Bone Black

	Pounds.	Dollars
1922	2,056,598	117,014
1923	2,398,913	147,049
1924	2,914,963	173,901
1925	2,892,136	177,470

Not separately stated after 1925.

Bone Black and Lampblack

	Pounds.	Dollars.
1926	3,194,613	225,737
1927	3,327,498	225,361
1928	3,322,883	192,887

Borax (Sodium Borate)

	Pounds.	Dollars
1920	10,943,110	905,617
1921	4,368,880	385,650
1922	10,094,724	545,601
1923	32,400,617	1,375,387
1924	36,475,491	1,611,258
1925	32,527,339	1,482,570
1926	33,277,473	1,519,740
1927	40,772,138	1,509,642
1928	131,614,024	3,689,643

Brushes, Toilet

	*Dozen.	Dollars.
1922	1,143,457	280,362
1923	1,319,516	330,266
1924	2,074,007	458,542
1925	3,199,425	683,371
1926	3,080,797	696,321
1927	258,423	707,316
1928	281,703	735,241

* Quantity stated as "Number" prior to 1927.

Brushes, Paint

	*Dozen.	Dollars.
1922	404,767	183,924
1923	629,472	182,428
1924	664,338	228,071
1925	772,234	256,834
1926	814,140	243,304
1927	57,302	191,143
1928	65,386	190,815

* Quantity stated as "Number" prior to 1927.

Brushes, Other

	*Dozen.	Dollars.
1915	.....	604,916
1916	.....	1,132,262
1917	.....	863,630
1918	.....	984,085
1919	.....	1,324,367
1920	.....	1,710,678
1921	.....	1,878,901
1922	2,108,151	299,498
1923	2,223,871	343,697
1924	1,933,457	296,046
1925	1,829,933	326,818
1926	2,027,072	375,703
1927	208,689	399,738
1928	163,540	281,972

* Quantity stated as "Number" prior to 1927.

Calcium Arsenate

	Pounds.	Dollars.
1928	597,132	36,005

Calcium Carbide

	Pounds.	Dollars.
1913	33,419,375	990,027
1914	32,845,649	962,040
1915	35,772,867	1,097,952
1916	37,873,692	1,211,267
1917	31,278,971	1,001,861
1918	28,814,176	1,327,864
1919	21,278,167	1,537,984
1920	21,164,404	1,040,754
1921	20,147,753	967,024
1922	12,477,237	629,164
1923	8,531,989	403,428
1924	11,127,322	517,037
1925	6,334,563	271,876
1926	4,466,966	186,649
1927	4,521,361	188,375
1928	4,379,025	187,718

Carbon Black

	Pounds.	Dollars.
1926	41,008,366	3,651,704
1927	47,377,747	4,077,415
1928	65,527,958	5,626,608

Carbon Dioxide (Carbonic Acid Gas)

	Pounds.	Dollars.
1928	270,998	$0,579

Candles

	Pounds.	Dollars.
1871	2,321,959	348,368
1881	1,780,572	210,842
1891	1,546,079	149,112
1901	2,432,815	236,547
1913	2,595,912	246,274
1914	3,047,756	283,016
1915	4,230,026	417,345
1916	6,120,695	575,650
1917	6,576,632	749,369
1918	5,530,017	900,514
1919	9,305,651	1,901,536
1920	7,691,420	1,494,616
1921	3,252,838	708,149
1922	2,161,076	322,491
1923	2,449,163	311,862
1924	1,597,054	239,057
1925	1,329,192	234,677
1926	1,324,601	254,929
1927	1,132,236	244,832
1928	1,157,344	271,036

Cement, Hydraulic

	Barrels (380 lbs.).	Dollars.
1901	218,240	438,915
1914	2,391,453	2,382,282
1915	2,361,451	3,241,686
1916	2,740,596	3,780,564
1917	2,345,952	4,111,550
1918	2,575,126	5,896,905
1919	1,938,223	5,871,902
1920	3,179,549	9,599,384
1921	2,023,167	7,700,061
1922	1,018,760	3,100,459
1923	1,127,460	3,274,073
1924	962,158	2,770,261
1925	829,342	2,514,423
1926	1,051,843	3,081,975
1927	918,377	3,010,607
1928	786,696	2,717,222

Chalk Manufactures

	Pounds.	Dollars.
1914	.....	40,154
1915	.....	51,175
1916	.....	60,417
1917	.....	105,202
1918	.....	186,711
1919	.....	273,741
1920	.....	373,200
1921	.....	497,993
1922	.....	199,640
1922	1,272,354	209,018
1923	1,225,340	150,679
1923	1,253,329	171,656
1924	1,134,508	133,057
1925	1,334,169	172,452
1926	1,630,880	241,174
1927	1,863,526	221,793
1928	1,606,946	234,265

Chewing Gum

	Pounds.	Dollars.
1901	.....	11,666
1914	.....	178,630
1915	.....	281,433
1916	.....	574,423
1917	.....	1,084,732
1918	.....	1,896,135
1919	.....	1,794,890
1920	.....	2,617,463
1921	.....	1,510,979
1922	1,911,832	392,890
1923	2,474,695	1,185,016
1924	2,899,414	1,353,362
1925	3,762,784	1,675,106
1926	5,085,375	2,198,229
1927	4,604,194	1,935,262
1928	3,094,857	1,344,564

Chlorine Gas

	Pounds.	Dollars.
1928	2,372,548	110,078

Exports from the United States

Clays, Fire Clay

	Tons.	Dollars.
1871	.....	10,904
1881	.....	156
1891	.....	* .....
1901	.....	2,330
1917	44,098	201,398
1918	50,529	310,527
1919	44,002	296,108
1920	32,076	257,443
1921	45,574	387,926
1922	19,241	131,910
1923	32,781	237,239
1924	44,133	328,258
1925	34,407	315,422
1926	44,733	356,295
1927	42,353	373,811
1928	43,991	396,682

Clays, All Other

	Tons.	Dollars.
1871	.....	* .....
1881	.....	8,762
1891	.....	26,857
1901	.....	146,151
1917	26,078	169,544
1918	22,293	189,146
1919	23,752	196,943
1920	40,562	440,874
1921	45,505	583,988
1922	17,315	185,714
1923	29,083	307,587
1924	27,711	292,995
1925	32,227	507,528
1926	33,261	518,690
1927	44,852	727,583
1928	47,845	727,295

Cocoa Butter

	Pounds.	Dollars.
1920	11,048,416	4,401,482
1921	3,170,617	987,534
1922	1,199,969	359,782
1923	956,849	287,026
1924	887,508	232,946
1925	1,576,702	427,170
1926	1,765,584	518,275
1927	289,727	104,337
1928	1,896,922	620,807

Coaltar and Pitch

	Barrels. (280 lbs.)	Dollars.
1913	121,188	152,278
1914	22,150	43,145
1915	21,317	39,647
1916	74,809	129,220
1917	62,674	145,574
1918	53,955	147,765
1919	60,672	201,653
1920	81,640	192,294
1921	128,103	287,300
1922	76,653	159,078
1923	388,183	1,156,945
1924	406,274	1,581,930
1925	95,319	283,914
1926	90,980	290,730
1927	740,834	3,633,792

Stated separately after 1927.

Coaltar, Crude

	Barrels (280 lbs.).	Dollars.
1928	66,664	253,829

Coaltar Pitch and Pitch Cake

	Tons.	Dollars.
1928	30,584	494,841

Coaltar Colors, Dyes and Stains N. E. S.

	Pounds.	Dollars.
1922	8,352,437	4,001,145
1923	13,935,567	5,011,825
1924	17,105,265	5,407,652
1925	20,683,472	6,591,543
1925	20,682,072	6,591,747
1926	25,101,464	6,042,748
1927	26,605,220	5,829,412
1928	25,782,028	5,556,030

Coaltar Distillate, Benzol

	*Gallons.	Dollars.
1918	25,400,852	2,152,815
1919	24,402,278	1,236,282
1920	17,253,314	732,836
1921	66,622,862	3,182,721
1922	55,179,363	1,978,776
1923	78,727,250	2,715,699
1924	100,384,912	3,101,983
1925	39,798,083	1,166,374
1925	48,744,643	1,309,646
1926	61,573,213	2,374,753
1927	29,434,714	8,041,548
1928	21,909,487	5,168,769

* Quantity stated as Pounds prior to 1927.

Coaltar Distillates, Other Crude

	Pounds.	Dollars.
1918	.....	5,620,851
1919	.....	3,748,370
1920	.....	3,618,424
1921	.....	4,101,129
1922	5,289,029	154,988
1923	8,160,098	236,405
1924	16,655,433	367,108
1925	16,652,904	483,801
1926	24,919,275	783,740
1927	21,093,192	525,809
1928	13,847,137	412,085

Coaltar Dyes in Packages for Household Use

	Pounds.	Dollars.
1928	157,967	124,345

Coaltar Intermediates, N. E. S.

	Pounds.	Dollars.
1923	1,371,649	273,628
1924	1,802,689	302,710
1925	1,854,442	294,493
1926	1,240,567	250,847
1927	2,459,529	432,276
1928	2,447,00[illegible]	248,763

Coaltar Medicinals

	Pounds.	Dollars.
1891	.....	1,880,728
1901	.....	3,440,177
1913	.....	7,110,493
1914	.....	6,721,978
1915	.....	7,130,379
1916	.....	8,397,971
1917	.....	8,613,202
1918	.....	10,190,138
1919	.....	15,277,037
1920	.....	20,124,561
1921	.....	18,038,328
1922	854,166	224,546
1923	217,784	138,526
1924	247,562	233,817
1925	504,127	410,267
1926	658,831	409,764
1927	885,729	378,295
1928	593,696	323,130

Coaltar Photographic Chemicals

	Pounds.	Dollars.
1922	248,119	108,858
1923	216,011	94,285
1924	183,075	96,661
1925	229,473	81,523
1926	415,128	119,951

Not stated after 1926.

Copperas and Other Iron Salts

	Pounds.	Dollars.
1928	496,956	8,134

Copper Ores, Concentrates and Unrefined Copper

	Pounds.	Dollars.
1916	4,921,089	1,137,770
1917	18,200,897	5,509,818
1918	26,550,026	6,920,687
1919	1 774,844	483,590
1920	2,929,227	555,615
1921	371,096	85,361
1922	295 935	34,873
1923	260,196	36,111
1924	295,278	50,125
1925	1.401.161	200,408
1926	2,662,245	269,690
1927	6,987,252	762,862
1928	5,161,155	593,202

Copper Sulphate (Blue Vitriol)

	Pounds.	Dollars.
1901	49,223,183	2,324,738
1913	5,052,680	262,561
1914	7,375,775	330,007
1915	10,239,918	445,580
1916	17,978,242	2,469 437
1917	28,128,190	3,012,954
1918	15,164,078	1,431,282
1919	13,223,923	1,339,945
1920	4,511,284	373,834
1921	4,291,378	297,335
1922	4,809,948	227,019
1923	2,535,137	145,305
1924	2,507,527	124,417
1925	4,219,538	199,531
1926	5,760,988	276,238
1927	5,102,717	259,644
1928	8,541,762	429,614

Cork, Crown Bottle Caps

	Gross.	Dollars.
1925	3,953,435	825,213
1926	4,272,257	870,004
1927	3 839,889	813,135
1928	3,627,428	744,929

Cork Disks, Washers and Wafers

	Gross.	Dollars.
1922	.....	108,432
1923	2,364,279	131,316
1924	2,573,944	134,282
1925	4,030,787	171,338
1926	5,706,411	203,854
1927	5,006,807	194,635
1928	4,997,686	193,676

Cork Stoppers

	Pounds.	Dollars.
1922	300,935	123,420
1923	325,247	121,416
1924	467,729	140,418
1925	94,645	59,288
1926	202,803	80,432
1927	192,897	82,759
1928	641,614	198,242

Cork, Other Manufactures of

	Pounds.	Dollars.
1891	.....	7,103
1901	.....	36,717
1913	.....	339,436
1914	.....	.....
1915	.....	211,795
1916	.....	455,424
1917	.....	541,579
1918	.....	847,377
1919	.....	1,150,524
1920	.....	1,140,517
1921	.....	1,757,636
1923	1,611,935	238,494
1924	2,389,261	318,611
1925	2,205,153	280,921
1926	3,093,591	421,606
1927	16,880,490	497,589
1928	3,596,707	492,590

Creams, Rouges and Other Cosmetics

	Pounds.	Dollars.
1922	2,071,263	966,133
1923	2,077,398	1,032,439
1924	2,355,842	1,213,569
1925	2,179,696	1,140,623
1926	2,601,939	1,441,338
1927	3,046,879	1,745,276
1928	3,231,724	1,774,327

Crucibles, Clay and Graphite

	Number.	Dollars.
1922	355,155	92,273
1923	370,895	100,331
1924	489,087	120,679
1925	523,135	99,210
1926	463,589	112,357
1927	693,616	139,308
1928	418,404	105,259

Dentifrices

	Pounds.	Dollars.
1922	4,026,935	2,405,497
1923	3,946,642	2,540,388
1924	2,909,841	2,430,508
1925	3,404,629	3,098,672
1926	2,045,387	1,876,510
1927	3,556,956	3,172,535

Separately stated after 1927.

Dental Creams

	Pounds.	Dollars.
1928	3,490,952	3,127,309

Dentifrices, All Other

	Pounds.	Dollars.
1928	764,937	399,708

Dextrin, or British Gum

	Pounds.	Dollars.
1922	16,241,674	536,027
1923	17,327,297	619,258
1924	20,133,355	795,583
1925	21,076,367	929,149
1926	21,458,176	949,040
1927	23,825,138	978,097
1928	24,674,856	1,002,135

Distilled Liquors

	Pf. Gallons.	Dollars.
1925	126,302	121,722
1926	212,455	161,118
1927	176,983	84,158
1928	142,418	70,338

Drugs, Vegetable, Crude, N. E. S.

	Pounds.	Dollars.
1901	.....	275,150
1913	.....	434,812
1914	.....	512,071
1915	.....	470,090
1916	.....	768,977
1917	.....	852,256
1918	.....	784,514
1919	.....	1,138,855
1920	.....	1,799,064
1921	.....	886,320
1922	3,919,912	878,036
1923	4,235,463	960,861
1924	6,085,687	1,394,113
1925	7,944,567	1,681,474
1926	5,136,427	1,085,328
1927	4,841,200	936,050
1928	5,349,561	1,038,138

Druggists' Rubber Sundries

		Dollars.
1918	.....	884,245
1919	.....	1,019,170
1920	.....	1,530,326
1921	.....	1,512,852
1922	.....	871,468
1923	.....	813,366
1924	.....	745,490
1925	.....	882,521
1926	.....	971,987
1927	.....	407,378
1928	.....	437,659

Dyes and Dyestuffs

		Dollars
1871	.....	655,115
1881	.....	626,749
1891	.....	660,590
1901	.....	894,278
1913	.....	847,656
1914	.....	356,919
1915	.....	1,775,926
1916	.....	5,102,002
1917	.....	11,710,887

Stated separately after 1917; see following classes.

Dyeing and Tanning Materials, Crude

	Tons.	Dollars
1923	840	74,017
1924	1,657	106,542
1925	5,897	137,349
1926	4,298	78,509
1927	1,538	77,717
1928	2,262	107,359

Dye Extracts, Logwood

	Pounds.	Dollars.
1918	.....	2,339,480
1919	.....	1,556,023
1920	.....	1,832,231
1921	.....	1,471,040
1922	2,626,103	448,713
1923	2,436,946	364,787
1924	1,336,232	190,720
1925	1,957,168	243,521
1926	1,928,186	209,521
1927	2,407,570	236,870
1928	2,391,116	225,439

Dye Extracts, All Other

	Pounds.	Dollars.
1918	.....	7,284,110
1919	.....	6,125,894
1920	.....	6,829,937
1921	.....	3,571,309
1922	2,614,110	459,861
1923	2,776,378	393,815
1924	1,649,951	234,820
1925	1,342,439	162,021
1926	1,184,530	126,889
1927	966,442	144,603
1928	1,013,918	107,561

Dynamite

	Pounds.	Dollars.
1915	7,712,999	924,079
1916	19,561,654	3,656,633
1917	16,254,201	3,488,143
1918	18,911,668	4,991,508
1919	13,525,096	3,190,447
1920	12,566,057	2,519,512
1921	11,878,600	2,451,856
1922	12,312,575	2,254,690
1923	17,446,779	2,645,949
1924	15,765,626	2,990,866
1925	15,411,715	2,247,259
1926	17,037,555	2,453,255
1927	14,104,901	2,037,538
1928	12,345,471	1,784,189

Eggs in the Shell

	Doz.	Dollars.
1871	5,017	1,428
1881	80,146	13,776
1891	363,116	64,259
1901	3,692,875	676,232
1918	18,969,167	7,167,134
1919	28,384,783	12,444,345
1920	38,326,986	19,149,536
1921	26,960,098	11,251,081
1922	24,620,050	9,094,018
1923	34,283,515	9,311,157
1924	32,831,528	8,659,198
1925	25,106,741	7,300,263
1926	27,930,637	8,169,266
1927	27,962,022	7,840,234
1928	22,831,678	6,393,662

Eggs and Yolks, Frozen, Dried or Canned

	Pounds.	Dollars.
1901	.....	1,610
1913	.....	67,854
1914	.....	47,968
1915	.....	88,865
1916	.....	210,255
1917	.....	72,491
1918	.....	525,880
1919	.....	341,304
1920	.....	282,198
1921	.....	201,832
1922	.....	130,944
1923	555,227	88,870
1924	488,093	74,918
1925	270,036	36,903
1926	425,595	66,648
1927	456,573	60,519
1928	746,998	140,308

Fertilizers, Ammonia Sulphate

	Tons.	Dollars
1920	17,489	2,264,387
1921	65,915	7,620,130
1922	168,077	8,720,775
1923	144,645	9,805,417
1924	130,902	8,918,536
1925	103,282	5,654,682
1926	143,666	7,989,058
1927	195,796	10,137,340
1928	103,275	4,845,392

Fertilizers, Guano

	Tons.	Dollars.
1871	1,206	35,000
1881	950	29,841

Not stated for later years.

Fertilizers, Nitrogenous Materials, N. E. S.

	Tons.	Dollars.
1923	10,805	466,229
1924	5,749	339,426
1925	6,114	340,700
1926	6,298	338,534
1927	9,324	572,823
1928	8,547	412,165

Fertilizers, Phosphates, Crude

	Tons.	Dollars.
1901	624,966	5,043,393

Stated separately for later years.

Fertilizers, Phosphate High-Grade Hard Rock

	Tons.	Dollars.
1913	494,200	4,942,000
1914	475,335	4,753,350
1915	46,050	460,050
1916	44,330	429,130
1917	14,983	150,505
1918	24,047	174,373
1919	80,834	715,104
1920	351,352	3,884,147
1921	274,953	4,087,512
1922	202,694	2,687,405
1923	183,015	2,236,746
1924	160,072	2,015,567
1925	161,064	2,132,142
1926	133,219	1,960,208
1927	123,260	901,099
1928	111,805	769,148

Fertilizers, Phosphate Rock, Land Pebble

	Tons.	Dollars.
1913	777,898	4,577,962
1914	1,090,630	5,837,969
1915	222,472	1,276,759
1916	255,206	1,324,877
1917	178,094	705,251
1918	110,909	456,383
1919	78,027	448,855
1920	395,581	2,991,371
1921	651,749	5,684,516
1922	516,635	3,708,250
1923	558,217	3,265,721
1924	660,447	3,301,329
1925	652,969	3,170,723
1926	730,805	3,466,610

Not stated separately after 1926.

Fertilizers, Phosphate Rock, All Other

	Tons	Dollars.
1913	794	4,127
1914	1,906	6,516
1915	887	5,888
1916	350	3,058
1917	8,108	255,389
1918	22,623	198,778
1919	30,026	308,653
1920	30,300	419,687
1921	16,862	277,747
1922	6,571	78,847
1923	2,278	24,116
1924	4,936	36,667
1925	16,602	132,743
1926	12,060	90,720

Not stated separately after 1926.

Fertilizers, Phosphate Rock, Land Pebble and Other Fertilizers,

	Tons.	Dollars.
1927	659,440	3,296,490
1928	834,799	4,082,341

Fertilizers, Prepared Mixtures

	Tons.	Dollars.
1922	14,416	690,972
1923	14,036	601,870
1924	34,129	1,630,391
1925	26,945	1,294,124
1926	31,921	1,387,068
1927	15,877	675,990
1928	24,907	928,039

Fertilizers, Superphosphates (Acid Phosphates)

	Tons.	Dollars.
1917	6,506	67,489
1918	6,155	202,285
1919	51,405	1,548,198
1920	93,432	3,099,855
1921	29,954	1,311,054
1922	14,806	267,739
1923	32,326	404,869
1924	50,285	640,301
1925	83,080	902,632
1926	62,976	951,900
1927	88,780	1,227 [illegible]
1928	104,382	1,725,804

Fertilizers, All Other

	Tons.	Dollars.
1871	.....	264,887
1881	.....	583,360
1891	231,915	2,182,274
1901	18,760	377,567
1913	74,834	1,875,999
1914	61,901	1,360,903
1915	81,224	2,128,190
1916	124,979	3,580,543
1917	216.222	6,056,887
1918	89,190	4,808,337
1919	106,656	6,384,432
1920	241,215	20,583,984
1921	108,431	5,988,306
1922	41,529	1,539,512
1923	43,988	1,784,529
1924	35,474	1,455,073
1925	48,227	2,110,393
1926	56,161	2,462,459
1927	80,677	3,420,942
1928	100,933	4,368,250

Ferrovanadium

	Pounds.	Dollars.
1915	755,905	641,792
1916	1,113,076	1,016,121
1917	2,613,387	2,831,669
1918	2,089,347	2,582,679
1919	637,604	770,862
1920	184,250	253,579
1921	450,070	916,147
1922	69,952	84,827
1923	37,440	50,529
1924	74,020	103,544
1925	18,933	24,106

Not stated after 1925.

Fire Extinguishers

	Number.	Dollars.
1917	.....	995,501
1918	.....	1,688,963
1919	.....	1,055,502
1920	.....	887,494
1921	.....	757,572
1922	54,952	272,739
1923	60,226	324,901
1924	50,801	336,402
1925	28,850	242,151
1926	38,112	851,615
1927	29,097	368,696
1928	44,598	310,347

Exports from the United States

Flavoring Extracts and Fruit Juices

	Pounds.	Dollars.
1913	.....	133,990
1914	.....	106,892
1915	.....	136,742
1916	.....	466,914
1917	.....	581,550
1918	.....	1,018,102
1919	.....	949,726
1920	.....	1,425,380
1921	.....	1,236,135
1922	2,819,469	761,284
1923	2,041,506	678,189

Stated separately after 1923.

Flavoring Extracts

	Pounds.	Dollars.
1924	1,550,149	569,392
1925	492,038	387,426
1926	566,329	463,375
1927	640,969	473,598
1928	655,102	576,673

Fly Paper and Fly Traps

		Dollars.
1914	.....	217,857
1915	.....	115,921
1916	.....	75,155
1917	.....	77,425
1918	.....	102,979
1919	.....	146,690
1920	.....	245,111
1921	.....	283,455
1922	.....	188,950
1923	.....	167,494
1924	.....	175,327
1925	.....	163,258
1926	.....	197,916
1927	.....	150,076
1928	.....	138,635

Formaldehyde (Formalin)

	Pounds.	Dollars.
1918	.....	866,668
1919	.....	797,671
1920	.....	2,289,217
1921	.....	1,376,281
1922	1,940,576	209,386
1923	1,593,014	207,056
1924	4,193,055	496,065
1925	2,917,665	312,973
1926	2,534,244	239,522
1927	2,262,953	229,838
1928	2,455,930	202,879

Fruit Juices and Other Beverages N. E. S.

	Gallons.	Dollars.
1924	261,901	289,610
1925	362,811	500,255
1926	378,552	567,021
1927	512,213	760,853
1928	517,907	833,973

Gelatin

	Pounds.	Dollars.
1922	259,230	175,308
1923	309,895	201,071
1924	418,476	279,200
1925	377,265	269,919
1926	380,974	262,237
1927	329,988	209,935
1928	220,691	167,696

German Silver

	Pounds.	Dollars.
1913	.....	65,362
1914	.....	38,691
1915	.....	30,690
1916	.....	273,826
1917	.....	410,295
1918	.....	270,703
1919	.....	304,514
1920	.....	426,768
1921	.....	720,343
1922	402,822	121,755
1923	513,754	154,954
1924	341,099	100,310
1925	284,813	80,234
1926	1,483,081	312,026
1927	1,135,314	284,368
1928	1,536,190	372,875

Ginseng

	Pounds.	Dollars.
1871	114,221	119,385
1881	338,841	561,545
1891	.....	.....
1901	149,069	801,672
1914	224,605	1,832,686
1915	103,184	919,931
1916	256,082	1,597,508
1917	198,483	1,386,208
1918	259,892	1,717,548
1919	281,623	2,057,161
1920	220,970	2,847,900
1921	157,351	1,623,496
1922	189,999	1,605,257
1923	174,693	2,416,752
1924	176,371	2,606,578
1925	140,749	1,980,325
1926	157,151	1,899,569
1927	188,912	2,636,783
1928	201,101	2,713,419

Glass Bottles, Vials, and Jars

		Dollars.
1914	.....	711,353
1915	.....	772,427
1916	.....	2,168,244
1917	.....	2,435,610
1918	.....	2,671,892
1919	.....	3,671,180
1920	.....	7,935,108
1921	.....	7,848,658
1922	.....	2,359,546
1923	.....	3,108,173
1924	.....	3,152,049
1925	.....	3,006,011
1926	.....	2,768,516
1927	.....	3,216,782

Glassware, Chemical

	Pounds.	Dollars.
1918	.....	153,937
1919	.....	198,083
1920	.....	207,366
1921	.....	294,672
1922	276,509	154,696
1923	206,356	145,988
1924	247,146	181,711
1925	247,474	194,094
1926	225,802	210,801
1927	205,125	191,483
1928	226,197	196,947

Glass, Common Window

	Boxes (50 sq. ft.)	Dollars.
1891	.....	11,244
1901	.....	55,286
1913	.....	434,361
1914	.....	311,339
1915	480,288	1,443,113
1916	894,793	3,123,916
1917	942,648	3,483,596
1918	718,443	3,401,120
1919	908,962	6,058,427
1920	682,593	4,494,554
1921	357,578	2,396,185
1921	337,578	2,396,185
1922	25,431	151,100
1923	39,217	215,192
1924	47,781	215,889
1925	34,465	179,559
1926	28,139	154,576
1927	23,861	151,093
1928	19,912	106,130

Glass, Other Window and Plate, N. E. S.

	Pounds.	Dollars.
1923	3,207,249	350,391
1924	2,234,935	254,309
1925	2,161,346	226,438
1926	2,548,087	268,593
1927	4,243,815	386,052
1928	3,645,670	394,257

Glass, Plate, Unsilvered

	Square feet.	Dollars.
1913	165,129	58,880
1914	74,867	35,767
1915	2,730,046	831,727
1916	5,149,512	1,568,181
1917	6,117,955	2,223,329
1918	5,556,719	2,451,918
1919	8,584,758	4,912,896
1920	4,783,766	2,878,628
1921	3,053,579	2,188,104
1922	2,875,223	1,156,617
1923	2,269,796	907,618
1924	1,736,251	614,456
1925	1,536,734	427,909
1926	1,515,843	368,973
1927	675,822	237,600
1928	1,689,178	526,395

Glucose (Corn Sirup)

	Pounds.	Dollars.
1881	821,937	28,587
1891	58,149,427	1,394,131
1901	204,209,974	3,113,898
1913	156,365,604	3,682,371
1914	162,680,378	3,766,284
1915	125,484,878	3,103,561
1916	148,523,098	3,772,860
1917	170,025,606	5,960,586
1918	80,970,744	4,949,159
1919	118,835,491	6,588,697
1920	219,425,235	13,831,817
1921	125,972,386	5,022,698
1922	258,447,893	6,109,862
1923	156,314,649	4,788,099
1924	141,141,220	4,860,251
1925	136,822,788	5,289,686
1926	165,589,145	5,737,399
1927	138,347,068	4,398,611
1928	139,182,563	4,605,415

Glue of Animal Origin

	Pounds	Dollars
1871	81,110	12,316
1881	367,069	59,038
1891	986,552	110,292
1901	2,703,400	254,477
1913	2,544,932	276,619
1914	2,351,770	258,611
1915	2,874,225	298,136
1916	4,946,298	531,329
1917	4,064,231	513,775
1918	4,901,764	837,679
1919	7,283,683	1,432,589
1920	13,039,002	2,186,756
1921	5,977,180	1,147,678
1922	2,708,674	418,759
1923	2,905,059	431,133
1924	2,295,018	369,073
1925	2,431,391	372,084
1926	2,490,584	385,246
1927	2,321,780	359,879
1928	2,358,646	404,474

Glue, Vegetable

	Pounds.	Dollars
1922	891,860	98,121
1923	715,483	81,872
1924	961,053	90,561
1925	1,016,050	79,161

Not stated after 1925.

Glycerin

	Pounds	Dollars
1918	21,045,991	10,587,581
1919	13,018,882	6,833,432
1920	2,257,623	522,611
1921	1,388,194	316,758
1922	3,625,999	508,807
1923	1,691,407	288,177
1924	1,951,393	326,920
1925	1,045,524	202,090
1926	1,220,012	262,081
1927	576,545	150,041
1928	1,788,189	259,541

Grape Sugar (Corn Sugar)

	Pounds	Dollars
1881	12,438,247	422,828
1891	.....	.....
1913	41,783,642	970,028
1914	36,850,496	799,635
1915	33,027,630	781,672
1916	37,863,084	962,101
1917	44,947,709	1,398,145
1918	16,887,557	1,045,512
1919	17,394,802	875,355
1920	25,839,015	1,559,620
1921	15,981,960	836,858
1922	15,534,284	448,244
1923	6,378,736	225,511
1924	6,909,709	296,167
1925	2,753,957	119,568
1926	4,552,385	154,415
1927	10,442,493	353,320
1928	6,767,843	226,920

Greases, Lubricating

	Pounds.	Dollars
1914	.....	2,304,918
1915	.....	2,384,395
1916	.....	3,904,436
1917	.....	2,816,958
1918	.....	2,986,815
1919	.....	4,710,484
1920	.....	6,157,323
1921	.....	6,851,986
1922	58,073,940	3,148,916
1923	69,669,600	3,659,865
1924	89,144,864	4,661,287
1925	94,835,439	5,152,121
1926	96,248,414	5,252,138
1927	96,480,422	5,176,816
1928	105,382,468	5,429,762

Greases, Oils and Fats, Animal, N.E.S.

	Pounds.	Dollars.
1881	.....	725,321
1891	.....	2,038,886
1901	.....	3,339,948
1914	.....	5,046,959
1915	.....	4,266,097
1916	.....	3,156,568
1917	.....	3,405,227
1918	.....	2,612,488
1919	.....	2,981,497
1920	.....	8,904,603
1921	.....	4,602,801
1922	65,606,527	4,486,761
1923	51,809,812	4,256,831
1924	78,761,951	6,743,279
1925	85,609,273	9,115,236
1926	64,652,403	7,096,524
1927	89,322,336	8,128,899
1928	69,408,919	6,233,915

Grease Stearin

	Pounds.	Dollars.
1922	3,406,737	277,215
1923	2,962,357	278,101
1924	4,096,531	382,242
1925	2,412,212	256,451
1926	2,555,973	291,614
1927	3,404,998	357,649
1928	1,748,639	156,459

Gums and Resins, N. E. S.

	Pounds.	Dollars.
1922	1,657,680	367,760
1923	2,159,671	590,079
1924	1,843,093	634,695
1925	2,563,137	886,578
1926	2,886,166	874,397
1927	3,184,895	901,384
1928	4,813,450	1,440,768

Gunpowder, Smokeless

	Pounds.	Dollars.
1922	925,480	369,848
1923	993,370	350,903
1924	1,507,484	498,570
1925	927,057	542,735
1926	880,888	516,870
1927	245,911	154,791
1928	947,637	759,160

Gunpowder (Except Smokeless)

	Pounds.	Dollars.
1871	391,300	95,397
1881	1,694,483	275,579
1891	733,834	88,676
1901	1,463,499	193,345
1915	7,686,480	5,091,442
1916	212,821,076	173,736,374
1917	404,668,874	330,664,927
1918	337,505,953	257,190,883
1919	109,613,165	85,812,212
1920	1,721,991	716,397
1921	43,485,291	28,286,158
1922	410,705	129,216
1923	488,672	142,425
1924	422,453	195,559
1925	612,753	180,408
1926	646,569	156,300
1927	491,894	156,229
1928	504,527	168,516

Gypsum or Plaster, Crude, Ground, Calcined and Manufactures

	Pounds.	Dollars.
1923	15,619,159	194,890
1924	19,704,383	290,749
1925	25,823,069	394,024
1926	39,061,299	601,722
1927	50,609,967	657,858

Stated separately after 1927.

Gypsum, Crude, Crushed or Ground

	Tons.	Dollars.
1928	1,507	16,513

Gypsum Plaster, Calcined and Manufactures of

	Pounds.	Dollars.
1928	26,863,606	327,520

Honey

	Pounds.	Dollars.
1871	.....	2,479
1881	.....	109,007
1891	.....	83,325
1901	.....	55,574
1914	.....	135,660
1915	.....	114,038
1916	.....	252,487
1917	.....	736,139
1918	16,090,672	2,509,570
1919	10,388,342	2,422,454
1920	3,659,198	955,482
1921	1,112,015	182,616
1922	2,406,922	281,899
1923	2,891,478	290,067
1924	1,921,815	228,237
1925	6,213,645	649,732
1926	4,074,590	433,768
1927	11,206,999	970,998
1928	9,943,615	902,708

Hops

	Pounds	Dollars.
1871	3,273,653	316,288
1881	8,950,655	2,016,970
1891	8,736,090	2,327,474
1901	14,943,674	2,466,515
1914	24,262,896	6,953,529
1915	16,210,443	3,948,020
1916	22,409,818	4,383,929
1917	4,824,876	773,926
1918	3,494,579	993,773
1919	7,466,952	2,333,850
1920	30,779,508	17,716,222
1921	22,206,028	10,873,263
1922	19,521,877	4,851,623
1923	13,497,188	2,589,659
1924	20,460,707	6,501,247
1925	16,121,978	3,257,404
1926	14,907,974	3,794,080
1927	16,369,268	3,465,159
1928	11,812,434	2,877,935

Infants' Food, Malted Milk, Etc.

	Pounds.	Dollars.
1918	.....	1,908,384
1919	.....	2,459,635
1920	.....	3,032,330
1921	.....	1,520,259
1922	2,480,589	720,587
1923	2,185,043	644,878
1924	1,820,291	542,481
1925	2,468,632	651,824
1926	2,516,947	684,414
1927	2,745,713	743,456
1928	2,473,675	673,550

Ink, Printing and Lithographic

	Pounds.	Dollars.
1901	.....	171,758
1915	.....	394,847
1916	.....	682,165
1917	.....	751,411
1918	.....	882,062
1919	.....	1,644,029
1920	.....	1,590,096
1921	.....	1,550,548
1922	8,655,372	993,352
1923	9,580,183	1,167,260
1924	10,132,580	1,305,758
1925	11,041,545	1,244,617
1926	11,005,826	1,450,796
1927	10,741,121	1,326,530
1928	11,119,392	1,370,008

Ink, Writing

		Dollars.
1921	.....	203,947
1922	.....	357,909
1923	.....	241,424
1924	.....	234,795
1925	.....	232,387
1926	.....	240,799
1927	.....	188,711
1928	.....	227,545

Ink, All Other

	Pounds.	Dollars.
1871	.....	12,158
1881	.....	8,449
1891	.....	122,235
1901	.....	119,467
1915	.....	154,874
1916	.....	285,277
1917	.....	377,446
1918	.....	407,008
1919	.....	726,204
1920	.....	886,436
1921	.....	774,423
1922	380,124	126,061
1923	553,280	161,007
1924	519,218	198,461
1925	322,533	164,026
1926	516,947	201,432
1927	683,020	260,728
1928	795,397	289,713

Insecticides, Fungicides, Etc.—Agricultural N. E. S.

	Pounds.	Dollars.
1927	1,933,678	240,641
1928	5,993,913	572,569

Insecticides, Disinfectants, Etc.—Household

	Pounds.	Dollars.
1927	7,945,659	1,976,012
1928	16,115,613	3,876,804

Instruments, Medical and Surgical

		Dollars.
1913	.....	222,659
1914	.....	206,421
1915	.....	560,741
1916	.....	355,170
1917	.....	516,355
1918	.....	671,250
1919	.....	860,179
1920	.....	743,111
1921	.....	802,769
1922	.....	288,864
1923	.....	272,568
1924	.....	288,022
1925	.....	350,290
1926	.....	435,692
1927	.....	528,178
1928	.....	524,833

Instruments, Optical

		Dollars.
1915	.....	1,018,016
1916	.....	2,593,509
1917	.....	2,945,920
1918	.....	1,073,339
1919	.....	1,209,911
1920	.....	1,465,265
1921	.....	1,158,559
1922	.....	798,270
1923	.....	772,242

Not stated after 1923.

Iron, Pig, Ferromanganese and Spiegeleisen

	Tons.	Dollars.
1901	16	1,206
1918	4,935	1,054,548
1919	2,184	448,899
1920	2,374	354,570
1921	3,335	688,369
1922	1,021	79,195
1923	3,594	131,812
1924	4,120	131,408
1925	4,204	117,739
1926	1,694	67,758
1927	706	49,239
1928	6,209	155,282

Iron, Pig, Ferrosilicon

	Tons.	Dollars.
1918	8,599	917,686
1919	3,712	378,528
1920	398	24,578
1921	577	36,725
1922	463	23,493
1923	931	38,968
1924	1,031	36,459

Not stated after 1924.

Lacquers

	Gallons.	Dollars.
1928	265,920	609,103

Lampblack

	Pounds.	Dollars
1871	.....	25,980
1881	.....	51,682
1891	.....	.....
1901	.....	.....
1913	.....	505,743
1914	.....	421,548
1915	.....	368,825
1916	.....	521,463
1917	.....	917,308
1918	.....	1,111,265
1919	.....	1,102,767
1920	.....	1,959,208
1921	.....	1,829,967
1922	17,062,311	2,028,105
1923	18,157,775	2,730,565
1924	37,563,672	4,929,142
1925	35,802,783	4,056,759

Not stated separately after 1925.

Exports from the United States

Lard

	Pounds.	Dollars.
1871	80,037,297	10,563,010
1881	378,142,496	35,226,575
1891	498,343,927	34,414,323
1901	611,357,514	46,560,148
1913	519,025,384	58,187,336
1914	481,457,792	54,402,911
1915	475,531,908	52,440 133
1916	427,011,338	47,634,876
1917	444,769,540	77,608,913
1918	392,506,355	98,216,806
1919	724,771,383	210,175,908
1920	587,224,549	171,323,351
1921	746,157,356	131,329,198
1922	766,950,108	91,484,669
1923	952,641,705	116,593,907
1924	1,014,898,388	129,090,796
1925	792,735,441	123,223,066
1926	696,445,258	114,470,609
1927	675,812,466	96,836,680
1928	716,397,788	94,545,639

Lard, Neutral

	Pounds.	Dollars.
1913	44,777,692	5,129,899
1914	29,323,786	3,270,236
1915	26,021,054	3,022,321
1916	34,426,590	4,050,397
1917	17,576,240	3,168,089
1918	4,258,529	1,074,603
1919	17,395,888	5,392,710
1920	23,202,027	6,916,279
1921	22,544,303	4,199,296
1922	20,497,006	2,886,703
1923	26,494,079	3,424,413
1924	24,238,981	3,241,682
1925	20,420,916	3,521,178
1926	20,131,967	3,642,511
1927	20,056,556	3,135,267
1928	23,799,064	3,309,170

Lard Compounds Containing Animal Fats

	Pounds.	Dollars.
1901	23,359,966	1,449,878
1913	67,456,832	5,915,759
1914	58,303,564	5,489,139
1915	69,980,614	6,045,752
1916	52,843,311	5,147,434
1917	36,359,393	5,269,844
1918	31,278,382	6,633,640
1919	128,157,327	31,138,158
1920	44,195,842	11,850,311
1921	42,155,971	6,099,914
1923	11,139,730	1,397,222
1924	6,907,366	935,340
1925	8,922,451	1,296,373
1926	14,957,990	2,151,325
1927	10,547,617	1,316,406
1928	5,653,600	739,705

Lard Compounds and Other Substitutes for Lard, Vegetable

	Pounds.	Dollars.
1922	25,478,494	2,968,705
1923	17,983,588	2,221,343
1924	7,029,296	992,569
1925	6,578,444	976,128
1926	8,599,874	1,266,221
1927	6,802,008	915,843
1928	5,245,858	711,312

Lead Arsenate

	Pounds.	Dollars.
1928	698,533	84,644

Lead Pigs and Bars

	Pounds.	Dollars.
1901	6,354,924	285,158
1914	40,323,662	1,511,900
1915	193,024,221	7,926,604

Stated as following classes after 1915.

Lead Pigs and Bars, from Domestic Ore

	Pounds.	Dollars.
1916	153,941,629	9,190,302
1917	159,673,425	11,721,929
1918	129,954,274	10,390,928
1919	32,483,910	2,360,495
1920	8,132,608	610,728
1921	2,702,864	225,414
1922	8,787,906	434,963
1923	7,597,684	454,446
1924	5,984,462	379,633
1925	9,597,566	696,649
1926	13,589,757	994,856
1927	4,065,583	284,340
1928	8,359,552	409,556

Lead Pigs and Bars, from Foreign Ore

	Pounds.	Dollars.
1916	52,285,948	2,114,692
1917	28,254,508	3,108,150
1918	84,260,273	6,965,492
1919	117,378,386	7,879,527
1920	61,648,426	3,596,008
1921	18,896,711	1,049,265
1922	74,685,868	3,472,874
1923	50,995,359	2,785,920
1924	114,281,919	6,191,380
1925	221,468,691	15,694,069
1926	130,296,781	9,869,435
1927	173,096,429	10,445,902
1928	240,934,121	11,067,755

Lime

	Barrels (200 lbs.).	Dollars.
1901	28,487	29,562
1913	284,685	214,543
1914	285,749	200,437
1915	169,078	117,644
1916	258,538	143,152
1917	168,521	126,266
1918	142,525	150,197
1919	65,015	108,647
1920	54,424	111,162
1921	64,568	143,068
1922	54,179	87,386
1923	110,142	152,671
1924	129,394	194,613
1925	143,686	195,757
1926	142,942	216,898
1927	150,161	206,408
1928	157,558	214,667

Lime Acetate

	Pounds.	Dollars.
1901	61,291,544	1,101,037
1913	80,579,835	2,221,427
1914	68,160,224	1,560,985
1915	24,673,247	486,405
1916	18,804,972	961,045
1917	12,959,222	607,847
1918	15,490,032	797,996
1919	9,369,940	401,476
1920	32,885,132	827,096
1921	12,845,700	350,635
1922	27,606,499	587,174
1923	26,134,454	797,338
1924	17,823,560	643,116
1925	21,288,742	640,807
1926	21,783,051	688,501
1927	16,127,622	582,683
1928	13,017,791	416,939

Lime, Chlorinated (Bleaching Powder)

	Pounds.	Dollars.
1918	13,060,401	558,666
1919	15,639,918	450,142
1920	31,232,379	840,092
1921	37,425,093	1,146,378
1922	26,439,251	502,870
1923	40,651,029	681,287
1924	23,576,021	438,445
1925	25,780,879	439,694
1926	22,345,324	408,852
1927	18,371,826	341,880
1928	21,182,777	365,234

Lithopone

	Pounds.	Dollars.
1922	3,231,722	169,962
1923	3,317,969	178,785
1924	2,110,429	129,440
1925	2,020,462	109,040
1926	3,119,011	161,883
1927	4,129,235	213,265
1928	5,313,143	275,054

Magnesia and Manufactures

	Pounds.	Dollars.
1922	3,831,681	223,686
1923	5,332,096	298,996
1924	4,077,834	285,859
1925	3,889,563	258,041
1926	6,160,702	339,680
1927	6,359,338	327,316
1928	5,324,933	298,291

Matches

	Pounds.	Dollars.
1871	.....	183,829
1881	.....	112,167
1891	.....	73,220
1901	.....	88,739
1917	.....	430,636
1918	.....	471,385
1919	.....	572,481
1920	.....	558,911
1921	.....	380,064
1922	1,184,648	217,821
1923	1,231,741	234,436
1924	1,154,001	195,558
1925	990,394	175,707
1926	777,511	142,396
1927	564,527	87,815
1928	875,665	111,031

Medicinal Preparations for External Use

		Dollars.
1928	.....	1,937,841

Medicinal Preparations for Internal Use

		Dollars.
1928	.....	5,730,205

Methanol, Pure and Denaturing Grades

	Gallons.	Dollars.
1901	919,504	476,582
1913	1,837,173	788,143
1914	1,598,776	652,486
1915	944,374	438,846
1916	1,472,258	857,161
1917	825,334	646,939
1918	2,538,001	2,070,026
1919	1,339,204	1,299,340
1920	687,008	775,117
1921	467,763	1,081,686
1922	737,050	566,445
1923	1,207,022	1,275,294
1924	640,837	686,911
1925	527,429	523,942
1926	409,210	290,109
1927	281,348	241,002
1928	497,459	347,394

Mica and Manufactures

	Pounds.	Dollars.
1917	.....	38,651
1918	.....	71,295
1919	.....	79,581
1920	.....	155,918
1921	.....	305,345
1922	1,134,397	129,186
1923	1,327,753	145,432
1924	1,407,561	178,579
1925	2,133,693	164,240
1926	2,148,725	220,908
1927	2,841,742	216,138
1928	2,664,402	222,710

Mucilage

		Dollars.
1901	.....	8,947
1913	.....	26,238
1914	.....	26,182
1915	.....	14,504
1916	.....	30,149

Included in following class after 1916.

Mucilage and Paste

	Pounds.	Dollars.
1917	.....	337,125
1918	.....	400,813
1919	.....	469,231
1920	.....	659,727
1921	.....	602,263
1922	2,305,354	261,565
1923	2,742,807	304,845
1924	2,302,250	257,538
1925	2,605,048	285,994
1926	3,819,147	449,196
1927	3,273,872	396,321
1928	3,485,949	332,866

Naphthalene

	Pounds.	Dollars.
1922	109,514	12,657
1923	95,164	10,386
1924	112,196	13,217

Not stated after 1924.

Nickel Oxide and Matte

	Pounds.	Dollars.
1901	5,990,676	1,510,508
1915	29,599,612	11,110,699
1916	25,649,995	9,876,403
1917	31,005,606	12,270,854
1918	18,818,212	7,680,502
1919	10,011,826	3,980,036
1920	2,392,614	1,144,083
1921	131,088	56,555
1922	9,897,775	1,147,993
1923	306,000	26,642

Not stated after 1923.

Nicotine Sulphate

	Pounds.	Dollars.
1928	892,358	268,866

Oilcake, Coconut

	Pounds.	Dollars
1920	224,313	6,404
1921	473,542	11,333
1922	7,960,197	106,057
1923	1,577,940	35,328
1924	2,310,620	48,447

Not stated after 1924.

Oilcake, Corn

	Pounds.	Dollars
1901	12,703,209	161,774
1913	76,262,845	1,131,330
1914	59,030,623	909,407
1915	45,026,125	798,206
1916	18,996,490	297,041
1917	15,757,612	289,547
1918	457,584	10,246
1919	562,300	16,193
1920	510,800	15,216
1921	1,794,653	29,989
1922	1,767,689	31,097
1923	15,746	502

Not stated after 1923.

Oilcake, Cottonseed

	Pounds	Dollars.
*1901	1,258,687,317	13,119,968
1913	1,128,092,367	15,225,798
1914	799,974,252	11,007,441
1915	1,222,600,889	15,432,126
1916	980,664,572	14,749,489
1917	864,802,375	15,059,920
1918	11,045,263	213,542
1919	179,148,955	5,286,428
1920	338,927,893	11,951,112
1921	359,986,856	7,304,118
1922	331,311,165	7,066,212
1923	342,544,194	7,789,075
1924	200,927,154	4,261,315
1925	593,663,417	12,522,746
1926	506,582,450	9,865,525
1927	599,447,753	9,322,013
1928	527,023,148	11,028,555

* Includes "Meal."

Oilcake, Linseed

	Pounds.	Dollars.
1918	126,184,029	3,210,734
1919	161,088,337	4,753,170
1920	316,496,323	12,015,139
1921	373,079,051	9,624,882
1922	422,863,573	9,524,980
1923	536,555,238	11,577,111
1924	546,847,552	11,221,023
1925	671,460,032	14,982,348
1926	577,907,698	12,744,953
1927	609,520,259	12,423,480
1928	589,173,158	12,888,620

Oilcake, Peanut

	Pounds.	Dollars.
1922	14,513,060	154,565
1923	672,000	11,760

Not stated after 1923.

Oilcake, all Other

	Pounds.	Dollars.
1922	3,172,090	55,161
1923	3,091,352	65,643
1924	1,291,612	25,253
1925	15,249,978	240,380
1926	13,344,088	210,323
1927	20,555,741	290,583
1928	22,569,751	406,010

Oilcake and Meal, Flaxseed or Linseed

	Pounds.	Dollars.
1901	455,154,860	5,471,930
1913	838,119,654	12,982,423
1914	662,868,639	9,650,379
1915	524,794,434	9,048,061
1916	640,916,204	11,935,130
1917	536,976,419	10,255,355

Subdivided after 1917.

Oilcake and Meal, All Other

	Pounds	Dollars
1871	203,587,040	4,160,021
1881	448,559,413	6,284,364
1891	633,344,851	7,452,094
1913	6,886,270	104,701
1914	8,484,936	100,447
1915	9,900,878	126,414
1916	28,876,367	410,166
1917	21,558,676	398,681
1918	4,865,602	104,865
1919	60,444,481	1,820,674
1920	60,138,141	1,983,802
1921	9,373,533	234,330

Stated separately after 1921.

Oilcake Meal, Cottonseed

	Pounds.	Dollars.
1915	256,365,126	3,474,244
1916	77,256,997	1,149,478
1917	285,297,316	5,221,091
1918	33,631,530	770,192
1919	132,477,150	3,628,074
1920	110,644,890	3,933,800
1921	94,713,965	1,858,061
1922	117,656,019	2,416,446
1923	111,805,810	2,302,170
1924	49,439,121	1,032,627
1925	291,711,396	6,208,352
1926	209,922,241	4,188,327
1927	391,067,817	6,157,509
1928	137,500,303	2,891,402

Oilcake Meal, Linseed

	Pounds.	Dollars.
1918	25,215,948	684,614
1919	41,699,626	1,164,396
1920	19,839,589	705,668
1921	18,184,807	449,993
1922	17,997,571	404,906
1923	38,057,227	840,615
1924	13,266,487	276,426
1925	19,666,051	439,496
1926	11,258,556	253,912
1927	15,600,727	314,421
1928	17,130,705	378,734

Oilcake Meal, all Other

	Pounds.	Dollars.
1922	9,058,338	188,170
1923	2,732,116	53,542
1924	5,322,296	103,526
1925	25,581,764	496,192
1926	4,904,989	96,420
1927	2,882,729	49,351
1928	2,126,952	43,744

Oil, Cod and Codliver

	Pounds.	Dollars.
1922	548,892	70,581
1923	323,393	64,145
1924	255,669	62,362

Not stated after 1924.

Oil, Fish

	*Pounds.	Dollars.
1871	1,402,016	1,145,406
1881	912,380	532,839
1891	1,467,321	401,203
1901	991,870	293,004
1913	1,901,953	501,227
1914	448,366	125,575
1915	88,880	29,802
1916	146,643	69,411
1917	123,848	81,556
1918	455,629	446,589
1919	282,855	365,828
1920	1,310,478	1,172,624
1921	118,261	122,027
1922	4,697,895	195,071
1923	3,503,275	172,558
1924	774,987	80,963
1925	1,226,178	121,574
1926	538,319	103,728
1927	933,032	112,389
1928	864,981	103,070

* Quantity stated in gallons prior to 1922.

Oil, Animal, Lard

	*Pounds.	Dollars.
1871	147,802	153,850
1881	836,255	558,576
1891	1,092,448	562,986
1901	766,783	438,645
1913	154,983	113,665
1914	110,199	87,364
1915	184,019	111,637
1916	421,969	266,836
1917	329,244	321,721
1918	91,585	126,672
1919	82,470	124,887
1920	124,231	195,252
1921	669,772	87,438
1922	690,791	80,043
1923	736,990	88,774
1924	714,816	80,570

* Quantity stated in gallons prior to 1921.
Not stated after 1924.

Oil, Animal, Neat's-foot

	Pounds.	Dollars.
1922	1,147,511	175,875
1923	1,233,304	187,793
1924	1,348,991	235,116
1925	1,694,825	256,675
1926	1,301,297	231,432
1927	1,350,376	217,659
1928	1,302,512	223,219

Oil, Animal, Oleo

	Pounds.	Dollars.
1891	80,231,035	7,859,130
1901	161,651,413	11,846,373
1913	92,849,757	10,866,253
1914	97,017,065	10,156,665
1915	80,481,496	9,341,188
1916	102,645,914	12,519,115
1917	67,110,111	11,065,019
1918	56,603,388	12,152,787
1919	59,292,322	15,670,854
1920	74,529,494	21,153,000
1921	106,414,800	15,211,998
1922	109,386,571	11,464,837
1923	104,956,378	12,067,689
1924	92,965,001	11,357,628
1925	105,145,483	11,357,628
1926	90,409,619	11,652,995
1927	92,719,505	10,588,889
1928	64,850,998	9,003,322

Oil, Animal, Whale

	Pounds.	Dollars.
1922	583,270	53,061
1923	722,530	31,138
1924	92,414	11,570
1925	422,916	19,331
1924	668,173	27,987

Not stated after 1924.

Oil, Animal, Not Otherwise Specified

	*Pounds.	Dollars.
1871	80	137
1881	77,496	60,359
1891	512,253	317,594
1901	640,316	236,742
1913	1,603,325	970,717
1914	891,035	609,294
1915	559,197	405,635
1916	655,587	492,964
1917	416,213	378,294
1918	329,576	409,466
1919	1,422,344	2,023,190
1920	1,452,489	2,055,883
1921	2,502,467	393,252
1923	1,183,475	117,992
1924	3,075,501	300,332
1925	1,944,792	250,200
1926	1,404,338	188,865
1927	886,505	96,415
1928	644,964	77,209

* Quantity stated in gallons prior to 1921.

Oil, Mineral, Illuminating (Kerosene)

	*Barrels. (42 gals.).	Dollars.
1871	133,007,177	31,309,780
1881	332,283,045	34,317,695
1891	571,119,805	40,221,201
1901	781,207,105	51,477,267
1913	1,048,894,297	66,189,265
1914	1,157,283,310	74,500,132
1915	886,316,740	53,607,082
1916	823,164,882	54,238,788
1917	833,969,012	642,377
1918	528,217,689	47,261,782
1919	725,686,746	81,495,706
1920	915,138,071	126,392,949
1921	833,194,727	128,089,900
1922	907,701,055	76,389,044
1923	854,563,611	81,976,661
1924	882,602,874	80,516,405
1925	892,267,121	85,433,981
1926	886,111,373	87,886,208
1927	21,249,245	96,269,835
1928	21,172,754	84,112,154

* Quantity stated in Gallons prior to 1927.

Oil, Mineral, Insulating, or Transformer Oils

	Gallons.	Dollars.
1927	3,270,417	1,018,827
1928	3,159,963	885,316

Oil, Mineral, Petroleum, Crude

	*Barrels. (42 gals.).	Dollars.
1871	9,460,816	1,820,803
1881	30,954,844	3,065,464
1891	91,415,095	5,876,452
1901	138,448,430	6,686,929
1913	195,642,935	7,750,767
1914	146,477,342	6,812,672
1915	152,514,129	4,911,684
1916	163,734,200	5,754,279
1917	176,368,675	7,162,550
1918	185,069,674	9,288,979
1919	163,782,498	9,905,490
1920	356,542,830	24,263,884
1921	355,200,756	29,137,765
1922	378,975,150	16,366,428
1923	552,566,487	20,268,679
1924	787,716,436	26,342,596
1925	621,175,086	23,969,246
1926	590,992,499	26,215,994
1927	15,372,741	27,239,976
1928	16,977,027	25,313,727

* Quantity stated in Gallons prior to 1927.

Exports from the United States

Oil, Mineral, Lubricating and Heavy Paraffin

	Gallons.	Dollars.
1881	4,852,208	1,054,064
1891	33,514,730	4,858,603
1901	71,457,605	10,006,937
1913	213,671,499	29,574,410
1914	196,884,606	27,852,959
1915	214,429,099	28,499,786
1916	250,392,768	37,451,607
1917	271,028,546	48,649,557

Stated as following classes after 1917:—

Oil, Mineral, Lubricating, Paraffin

	Gallons.	Dollars.
1918	10,287,896	2,131,292
1919	7,596,525	1,173,821
1920	6,823,644	1,527,773
1921	1,183,675	573,450
1922	15,077,854	2,996,612

Stated separately after 1922.

Oil, Mineral, Lubricating, All Other

	Gallons.	Dollars.
1918	259,385,874	64,030,825
1919	265,552,016	84,982,874
1920	329,288,894	110,539,083
1921	332,274,197	136,495,631
1922	307,794,350	75,113,214

Stated separately after 1922.

Oil, Mineral, Lubricating, Red and Pale

	*Barrels. (42 gals.).	Dollars.
1923	186,847,147	38,147,688
1924	210,481,538	43,910,970
1925	212,190,013	42,048,500
1926	226,019,048	42,606,563
1927	5,592,690	45,248,103
1928	6,759,497	53,025,810

* Quantity stated in Gallons prior to 1927.

Oil, Mineral, Lubricating, Black

	*Barrels. (42 gals.).	Dollars.
1923	47,155,711	6,361,092
1924	44,992,431	6,528,653
1925	49,055,791	6,399,944
1926	28,974,332	4,182,765
1927	621,294	5,300,642
1928	896,571	4,328,616

* Quantity stated in Gallons prior to 1927.

Oil, Mineral, Lubricating, Cylinder

	*Barrels. (42 gals.).	Dollars.
1923	114,252,692	31,551,377
1924	112,142,588	32,973,087
1925	115,675,121	35,460,990
1926	140,729,945	42,408,624
1927	2,915,258	36,879,698
1928	2,998,008	34,464,715

* Quantity stated in Gallons prior to 1927.

Oil, Mineral, Lubricating, Light Oils in Small Packages

	Gallons.	Dollars
1923	664,973	596,144
1924	563,706	535,466
1925	481,070	465,912
1926	443,992	427,985
1927	476,873	458,896
1928	583,404	523,943

Oil, Mineral, Naphthas, Etc., Gasoline

	Gallons.	Dollars.
1913	81,698,917	10,931,490
1914	151,611,537	21,699,475
1915	156,860,666	17,603,317
1916	100,148,554	16,297,561
1917	226,154,560	46,932,967
1918	260,880,122	61,642,859
1919	322,920,087	78,088,061
1920	294,939,121	72,160,278
1921	382,610,683	103,199,531

Not stated separately after 1921.

Oil, Mineral, Gasoline, Naphtha and Other Light Products

	*Barrels. (42 gals.).	Dollars.
1871	7,209,592	746,797
1881	17,292,310	1,693,975
1891	12,171,147	903,056
1901	17,834,254	1,555,606
1913	101,821,572	14,269,878
1914	40,840,730	5,653,210
1915	94,335,128	10,296,928
1916	194,644,803	29,472,233
1917	199,563,352	41,057,840
1918	209,029,477	52,739,227
1919	146,301,861	38,654,419
1920	184,761,512	50,537,312
1921	259,603,571	77,415,408
1922	550,478,181	117,630,281
1923	674,716,726	134,165,991
1924	1,035,875,520	151,175,341
1925	1,217,930,141	175,158,381
1926	1,589,551,815	239,066,839
1927	42,841,426	246,142,953
1928	46,507,584	196,569,999

* Quantity stated in Gallons, 1913 to 1927.

Oil, Mineral, Residuum, Including Road Oils

	*Barrels. (42 gals.).	Dollars.
1871	.....	14,770
1881	77,330	184,411
1891	38,066	77,422
1901	622,538	1,376,047
1913	27,513,568	496,237
1914	113,370,245	1,907,715
1915	9,952,970	230,552
1916	13,538,335	388,175
1917	551,967	33,813
1918	881,875	96,480
1919	181,121	14,557
1920	50,272,602	2,782,783
1921	9,825,633	609,302
1922	10,091,192	800,044
1923	8,364,896	668,784
1924	1,190,329	105,883
1925	2,725,586	232,074
1926	5,902,095	509,465
1927	195,871	584,399
1928	153,565	439,341

* Quantity stated in Gallons, 1913 to 1926.

Oil, Mineral, Gas and Fuel Oil

	*Barrels. (42 gals.).	Dollars.
1914	475,143,205	13,747,863
1915	672,931,878	18,543,976
1916	897,853,433	24,770,996
1917	1,040,671,713	32,329,617
1918	1,223,283,641	61,137,607
1919	898,044,089	49,918,288
1920	685,738,142	38,194,061
1921	861,934,328	59,237,822
1922	740,196,772	32,099,290
1923	937,243,885	26,687,604
1924	1,361,122,655	41,613,640
1925	1,433,542,658	52,046,697
1926	1,381,540,720	44,916,778
1927	38,934,219	49,799,788
1928	44,080,759	48,643,619

* Quantity stated in Gallons prior to 1927.

Oil, Mineral, Fuel or Bunker Oil, Laden on Vessels Engaged in Foreign Trade

	Barrels.	Dollars.
1915	2,898,393	2,567,017
1916	4,532,822	4,195,803
1917	5,924,460	6,418,474
1918	5,954,448	8,858,880
1919	8,648,967	17,308,722
1920	19,857,307	43,604,177
1921	28,903,722	72,130,004
1922	29,120,537	49,841,883
1923	34,477,720	45,856,007
1924	39,762,794	54,458,168
1925	44,449,884	65,731,170
1926	43,458,119	65,591,522
1927	48,552,270	73,546,702
1928	31,315,564	68,222,629

Oil, Mineral, White

	Gallons.	Dollars.
1928	124,500	107,371

Oil, Coconut

	Pounds.	Dollars.
1920	141,088,048	28,968,689
1921	6,639,055	886,574
1922	12,972,264	1,071,924
1923	12,992,853	1,088,027
1924	19,422,637	1,675,544
1925	17,889,820	1,678,511
1926	15,443,814	1,554,592
1927	19,626,137	1,787,792
1928	22,357,823	1,953,251

Oil, Corn

	Pounds.	Dollars.
1901	28,851,270	1,831,980
1913	19,739,622	1,292,009
1914	18,281,576	1,307,204
1915	17,789,635	1,302,159
1916	8,967,826	770,076
1917	8,779,760	998,105
1918	1,831,114	306,219
1919	1,095,414	227,727
1920	12,482,679	2,954,637
1921	6,919,170	1,033,106
1922	5,782,903	678,180
1923	4,361,100	558,834
1924	3,678,608	495,777
1923	5,223,644	651,422
1924	4,195,988	540,333
1925	3,586,458	490,617
1926	2,927,111	408,239
1927	404,732	50,225
1928	328,668	43,525

Oil, Cottonseed

	Pounds.	Dollars.
1871	.....	140,577
*1881	3,444,084	1,465,255
*1891	11,003,160	3,975,308
*1901	49,356,741	16,541,321
1913	315,232,892	20,736,972
1914	192,963,079	13,843,179
1915	318,366,525	21,872,940
1916	266,529,960	22,659,800
1917	158,911,767	19,878,325
1918	100,779,981	18,309,854
1919	178,709,033	36,970,545
1920	159,400,618	36,220,529
1921	283,268,025	31,392,838

* "Gallons." Stated separately after 1921.

Oil, Cottonseed, Crude

	Pounds.	Dollars.
1922	31,712,143	2,508,696
1923	25,933,401	2,258,361
1924	23,533,427	2,214,972
1925	24,062,177	2,243,432
1926	36,636,645	3,378,975
1927	38,321,294	2,926,929
1928	50,817,695	4,343,766

Oil, Cottonseed, Refined

	Pounds.	Dollars.
1922	43,590,678	4,778,446
1923	38,358,468	4,238,709
1924	15,884,115	1,866,237
1925	29,198,439	3,508,066
1926	22,378,576	2,702,830
1927	19,258,851	2,033,533
1928	10,652,052	1,218,126

Oil, Linseed

	*Pounds.	Dollars.
1871	37,841	35,962
1881	72,190	48,479
1891	76,789	48,267
1901	99,919	66,653
1913	1,733,925	874,461
1914	239,198	134,540
1915	1,212,133	660,089
1916	714,120	479,230
1917	1,201,554	1,117,895
1918	1,187,850	1,532,307
1919	1,096,304	1,805,291
1920	1,136,585	2,086,292
1921	4,209,577	719,414
1922	2,702,634	332,781
1923	3,105,089	410,104
1924	2,628,255	346,518
1925	2,404,821	338,092
1926	2,354,867	311,340
1927	2,738,491	270,764
1928	2,221,196	259,829

* Quantity stated in gallons prior to 1921.

Oil, Peanut

	Pounds.	Dollars.
1920	4,922,781	1,196 881
1921	1,594,643	223,680
1922	963,102	100,691
1923	188,308	21,117
1924	167,529	14,448

Not stated after 1924.

Oil, Soya Bean

	Pounds.	Dollars.
1920	67,781,974	14,911,973
1921	5,117,605	760,643
1923	2,458,080	597,288
1923	2,495,218	218,460
1924	2,891,878	310,493
1925	578,601	64,913
1926	622,900	50,548
1927	3,104,114	386,045
1928	7,514,159	806,100

Oil, Peppermint

	Pounds.	Dollars.
1891	45,321	120,831
1901	60,166	63,672
1913	144,663	395,551
1914	117,809	397,050
1915	184,981	384,593
1916	154,096	323,070
1917	100,032	218,627
1918	76,247	233,899
1919	65,548	325,070
1920	90,205	677,605
1921	50,425	286,624
1922	154,344	314,643
1923	102,507	290,715
1924	159,729	536,858
1925	127,218	823,116
1926	49,475	657,610
1927	143,984	803,787
1928	198,349	698,015

Oils, Vegetable, All Other, Fixed or Expressed

	Pounds.	Dollars.
1891	.....	93,429
1901	.....	363,066
1913	.....	420,360
1914	.....	338,956
1915	.....	1,198,852
1916	.....	2,230,002
1917	.....	3,004,283
1918	.....	3,951,659
1919	.....	18,512,517
1920	.....	3,258,446
1921	.....	1,013,541
1922	6,369,664	669,142
1923	8,063,141	863,031
1924	7,118,048	865,443
1925	6,779,829	770,904
1926	7,974,479	927,790
1927	8,529,176	953,972
1928	9,032,766	1,223,028

Oils, Vegetable, All Other, Essential or Distilled

	Pounds.	Dollars.
1871	.....	119,311
1881	.....	92,738
1891	.....	65,104
1901	.....	169,004
1913	.....	325,040
1914	.....	230,557
1915	.....	413,104
1916	.....	705,037
1917	.....	1,062,809
1918	.....	857,044
1919	.....	1,216,870
1920	.....	1,551,992
1921	.....	890,472
1922	.....	521,907
1923	583,670	611,659
1924	1,098,855	774,786
1925	1,175,504	923,111
1926	1,697,394	967,530
1927	3,728,064	1,367,474
1928	3,432,510	1,299,777

Oils, Other Edible Vegetable Oils and Fats

	Pounds.	Dollars.
1927	1,425,297	214,882
1928	3,487,938	551,432

Oilseeds

(Not elsewhere stated)

	Pounds.	Dollars.
1922	3,886,852	140,590
1923	2,721,909	94,967
1924	4,083,304	246,348
1925	3,169,900	212,316
1926	3,242,297	240,973
1927	826,821	89,091
1928	3,201,300	156,729

Oleic Acid, or Red Oil

	Pounds.	Dollars.
1922	3,590,298	290,482
1923	2,378,676	201,556
1924	2,693,135	220,272
1925	1,432,931	126,814
1926	774,359	79,371
1927	871,971	79,581
1928	4,476,989	396,850

Oleo Stock

	Pounds.	Dollars.
1922	15,596,285	1,523,464
1923	12,520,959	1,359,349
1924	11,344,686	1,277,193
1925	15,128,948	1,890,776
1926	11,833,316	1,518,345
1927	12,031,543	1,302,011
1928	8,480,927	1,116,580

Oleo and Lard Stearin

	Pounds.	Dollars
1922	10,678,056	1,049,692
1923	10,134,498	1,051,212
1924	7,081,402	760,833
1925	7,138,661	868,408
1926	7,660,672	1,002,706
1927	6,669,828	721,084
1928	3,927,252	436,761

Oleomargarin of Animal or Vegetable Fats

	Pounds.	Dollars.
1926	1,256,251	182,014
1927	942,296	149,115
1928	732,117	118,890

Oleomargarin Containing Animal Fats

	Pounds.	Dollars
1881	26,327,671	3,815,560
1891	1,986,743	255,624
1901	12,990,699	484,501
1913	2,987,582	311,485
1914	2,532,821	263,453
1915	5,252,183	617,035
1916	5,426,221	640,480
1917	5,651,267	901,659
1918	6,309,896	1,631,267
1919	18,570,400	5,179,429
1920	20,952,180	6,047,413
1921	6,219,165	1,478,649
1922	1,989,421	353,803
1923	2,027,546	327,986
1924	1,125,096	179,906
1925	732,811	122,018

Not stated separately after 1925.

Oleomargarin, Vegetable

	Pounds.	Dollars.
1922	333,756	47,709
1923	1,736,389	235,842
1924	270,900	44,131
1925	155,171	24,790

Not stated separately after 1925.

Oxygen Gas

	Pounds.	Dollars.
1928	236,614	41,841

Paints, Dry Colors, N. E. S.

	Pounds.	Dollars.
1914	.....	690,836
1915	.....	1,072,736
1916	.....	1,591,913
1917	.....	1,810,324
1918	.....	1,907,667
1919	.....	2,808,980
1920	.....	2,991,018
1921	.....	2,170,237
1922	31,992,945	1,350,448
1923	35,146,204	1,633,416
1924	33,363,044	1,437,948

Not stated separately after 1924.

Paints, Enamel Paints

	Gallons.	Dollars.
1922	.....	418,321
1923	.....	579,343
1924	.....	497,939
1925	.....	564,754
1926	.....	1,216,000
1927	390,321	1,045,869
1928	630,203	1,480,696

Paints, Ship Bottom Paints

	Gallons.	Dollars.
1928	31,485	70,973

Paints, Other Ready Mixed

	Gallons.	Dollars.
1914	852,910	1,096,335
1915	703,494	884,700
1916	1,099,721	1,384,226
1917	1,216,062	1,756,393
1918	1,519,472	2,398,332
1919	2,288,632	4,556,192
1920	2,551,531	5,278,390
1921	2,317,630	5,357,696
1922	1,080,699	2,258,019
1923	1,652,203	3,344,826
1924	1,937,294	3,883,649
1925	2,098,862	4,364,770
1926	2,192,415	4,523,916
1927	2,514,609	5,165,616
1928	2,629,969	5,277,534

Paints, Red Lead

	Pounds.	Dollars.
1918	4,792,330	567,854
1919	7,952,730	946,114
1920	8,072,731	948,907
1921	2,046,339	244,151
1922	2,015,606	165,724
1923	4,098,227	401,191
1924	2,517,030	265,091
1925	1,452,968	163,315
1926	1,815,177	209,247
1927	2,160,833	219,550
1928	2,986,255	267,595

Paints, White Lead

	Pounds.	Dollars.
1914	16,845,154	1,013,506
1915	19,700,810	1,070,646
1916	29,107,449	1,861,730
1917	21,388,938	1,944,145
1918	18,235,783	2,072,352
1919	20,462,348	2,337,318
1920	34,441,918	3,598,918
1921	17,408,808	1,895,696
1922	8,945,730	672,211
1923	8,575,154	710,655
1924	10,031,589	807,313
1925	12,585,507	1,131,169
1926	13,410,634	1,251,819
1927	11,393,274	992,917
1928	13,962,979	1,019,783

Paints, Not Elsewhere Specified

	Pounds.	Dollars.
1871	.....	172,604
1881	.....	287,338
1891	.....	690,698
1901	.....	1,317,961
1914	.....	1,779,863
1915	.....	1,527,494
1916	.....	3,259,539
1917	.....	4,413,549
1918	.....	4,876,312
1919	.....	6,213,430
1920	.....	7,310,876
1921	.....	5,947,461
1922	10,063,393	1,720,360
1923	11,476,700	2,007,894
1924	9,368,566	1,599,001
1925	9,529,435	1,749,672
1926	11,509,686	2,490,478
1927	9,308,733	1,923,022
1928	9,459,461	1,856,991

Paper, Grease- and Waterproof

	Pounds.	Dollars.
1918	.....	155,188
1919	.....	596,887
1920	.....	239,512
1921	.....	345,366
1922	1,006,766	143,467
1923	1,365,182	182,340
1924	1,733,827	217,903
1925	1,639,822	198,637
1926	2,376,837	349,477
1927	2,479,406	351,656
1928	2,808,068	424,492

Paraffin and Paraffin Wax

	Pounds.	Dollars.
1871	37,423	4,758
1881	5,369,821	437,187
1891	66,366,003	3,714,649
1901	129,184,964	6,857,288
1913	290,678,861	9,679,273
1914	186,357,728	6,516,338
1915	330,374,056	10,589,843
1916	360,650,114	12,873,250
1917	348,743,903	16,038,811

Stated as following classes after 1917:—

Paraffin Wax, Unrefined

	Pounds.	Dollars.
1918	82,534,361	4,077,220
1919	53,729,436	4,915,237
1920	79,023,341	5,377,069
1921	50,121,130	2,994,654
1922	69,651,581	2,039,943
1923	94,914,178	2,773,283
1924	92,065,331	3,246,454
1925	76,936,429	3,853,025
1926	70,392,980	3,714,836
1927	67,082,124	3,228,117
1928	94,401,787	3,062,565

Paraffin Wax, Refined

	Pounds.	Dollars.
1918	164,159,159	13,866,810
1919	185,078,571	19,642,149
1920	282,384,250	26,068,672
1921	203,289,734	17,524,258
1922	189,864,960	6,965,791
1923	232,368,527	8,329,708
1924	275,579,858	11,581,138
1925	256,488,677	14,111,913
1926	273,199,220	15,547,800
1927	259,161,962	14,082,180
1928	310,515,644	12,915,110

Paste

		Dollars.
1901	.....	868
1913	.....	69,052
1914	.....	68,881
1915	.....	91,522
1916	.....	298,537
1917	.....	299,585

Included in "Mucilage and Paste" after 1917.

Exports from the United States

Peanuts

	Pounds.	Dollars.
1918	5,875,076	325,725
1919	8,669,430	450,765
1917	22,413,297	1,336,638
1918	12,488,209	1,517,891
1919	13,596,660	1,475,195
1920	14,137,956	1,740,002
1921	13,149,417	1,083,358
1922	12,621,802	834,912
1923	8,716,289	681,189
1924	3,903,914	381,492
1925	2,862,773	307,201
1926	3,711,196	302,241
1927	5,068,912	397,820
1928	4,580,546	452,064

Perfumery and Toilet Waters

		Dollars
1871	.....	392,993
1881	.....	292,935
1891	.....	450,663
1901	.....	880,994
1913	.....	1,441,982
1914	.....	1,620,872
1915	.....	1,715,059
1916	.....	2,933,063
1917	.....	3,615,620
1918	.....	3,965,465
1919	.....	6,077,854
1920	.....	7,979,237
1921	.....	6,236,766
1922	.....	504,167
1923	.....	582,435
1924	.....	461,096
1925	.....	439,932
1926	.....	424,381
1927	.....	370,215
1928	.....	435,943

Petroleum Asphalt

	Tons.	Dollars.
1926	109,421	2,560,068
1927	241,711	5,794,256
1928	461,280	10,952,456

Petroleum Jelly, Petrolatum

	Pounds.	Dollars.
1913	.....	536,637
1914	.....	681,889
1915	.....	855,842
1916	.....	1,099,215
1917	.....	989,307
1918	.....	1,278,058
1919	.....	2,608,701
1920	.....	3,156,256
1921	.....	2,072,595
1922	7,294,224	1,254,188
1923	7,579,221	1,186,230
1924	10,026,134	1,211,606
1925	7,971,370	1,131,944
1926	5,648,619	991,436
1927	5,165,205	862,748
1928	5,639,428	870,788

Pigments, Ocher, Umber, Sienna, Metallic, Whiting, Etc.

	Pounds.	Dollars.
1923	29,458,942	1,025,438
1924	29,094,818	892,507
1925	26,438,536	791,545
1926	33,348,402	997,070
1927	33,048,106	1,039,491
1928	39,114,090	1,180,255

Pigments, Chemical, N. E. S.

	Pounds.	Dollars.
1925	6,335,926	622,344
1926	6,420,983	803,547
1927	4,817,414	595,784
1928	3,880,512	560,034

Plasters, Medicated

	Pounds.	Dollars.
1925	487,357	636,536
1926	501,120	632,405
1927	377,126	514,369
1928	333,555	401,434

Platinum, Ingots, Sheets, Wire, Alloys and Scrap

	Ounces, troy.	Dollars.
1913	1,299	57,071
1914	278	12,977
1915	1,397	53,266
1916	1,083	92,388
1917	3,254	207,662
1918	468	50,697
1919	91	10,074
1920	1,640	223,332
1921	3,065	234,804
1922	1,198	84,250
1923	1,080	118,938
1924	3,275	358,205
1925	11,933	1,314,773
1926	14,907	1,641,243
1927	13,772	1,307,891
1928	16,378	1,115,620

Platinum Manufactures (Except Jewelry)

	Ounces, troy.	Dollars.
1913	.....	126,013
1914	.....	71,172
1915	.....	27,101
1916	.....	82,929
1917	.....	77,265
1918	.....	33,557
1919	.....	30,363
1920	.....	85,364
1921	.....	114,872
1922	486	35,967
1923	279	24,969
1924	882	88,178
1925	2,254	234,427
1926	3,396	208,837
1927	1,606	155,465
1928	1,088	120,898

Plumbago or Graphite, Unmanufactured

	Pounds.	Dollars.
1881	.....	135
1891	.....	.....
1900	.....	35,508
1913	4,508,569	321,679
1914	5,376,880	387,075
1915	2,324,081	152,446
1916	936,869	46,907
1917	2,500,057	163,333
1918	4,912,750	331,360
1919	1,392,043	102,180
1920	1,306,859	107,552
1921	1,195,228	84,908
1922	1,892,881	90,185
1923	1,197,760	100,782
1924	2,003,891	147,613
1925	2,170,979	159,908
1926	1,076,866	75,210

Included in next class after 1926.

Plumbago or Graphite and Manufactures, Except Crucibles

	Pounds.	Dollars.
1913	.....	175,383
1914	.....	269,499
1915	.....	398,433
1916	.....	845,729
1917	.....	1,296,305
1918	.....	716,538
1919	.....	862,544
1920	.....	517,186
1922	2,028,463	255,019
1923	2,142,055	302,941
1924	1,554,195	268,489
1925	1,824,136	289,286
1926	3,281,135	455,081
1927	4,133,254	480,236
1928	3,733,918	391,802

Polishes, Metal and Stove

	Pounds.	Dollars.
1913	.....	127,898
1914	.....	102,504
1915	.....	167,277
1916	.....	225,783
1917	.....	214,800
1918	.....	192,691
1919	.....	262,043
1920	.....	451,934
1921	.....	346,104
1922	8,602,952	400,186
1923	2,553,406	312,181
1924	3,084,322	360,046
1925	3,188,649	375,885
1926	2,247,537	319,866
1927	2,374,429	307,103
1928	2,241,451	360,586

Polishes, Shoe Polishes

	Pounds.	Dollars.
1922	5,173,840	1,188,552
1923	5,709,705	1,279,923
1924	5,647,717	1,312,066
1925	5,439,708	1,270,834
1926	4,140,347	1,157,845
1927	3,253,603	962,552
1928	3,643,509	957,217

Polishes, All Other

	Pounds.	Dollars.
1915	.....	508,629
1916	.....	784,552
1917	.....	1,036,234
1918	.....	1,009,100
1919	.....	2,077,319
1920	.....	2,845,110
1921	.....	2,072,983
1922	3,913,266	567,932
1923	3,270,695	466,427
1924	2,537,564	471,916
1925	2,515,106	496,493
1926	2,816,984	527,095
1927	3,689,580	668,601
1928	3,752,246	766,972

Potash, Bichromate

	Pounds.	Dollars
1922	4,430,208	433,552
1923	3,484,876	318,220
1924	1,574,674	149,693
1925	991,576	74,054
1926	251,978	19,717

Not stated after 1926.

Potash, Chlorate

	Pounds	Dollars
1919	1,564,662	681,129
1919	1,903,133	678,278
1920	2,845,858	475,084
1921	1,130,771	179,300
1922	447,780	40,289
1923	391,790	39,667
1924	493,417	26,538

Not stated after 1924.

Potash Compounds, N. E. S.

	Pounds.	Dollars.
1918	.....	961,989
1919	.....	1,318,188
1920	.....	3,362,827
1921	.....	1,309,859
1922	7,483,175	296,378
1923	4,232,198	199,778
1924	3,261,590	156,391
1925	2,477,858	274,359
1926	3,545 149	317,670
1927	3,086,564	352,102
1928	13,194,831	791,160

Pyroxylin Products, Known as Celluloid, etc., Unmanufactured

	Pounds.	Dollars.
1922	1,225,063	1,494,372
1923	1,790,701	2,232,074
1924	1,756,210	1,991,701
1925	2,629,360	2,371,849
1926	2,300,144	1,770,968
1927	1,700,987	1,320,818
1928	2,391,481	1,915,984

Quicksilver or Mercury

	Pounds	Dollars
1871	994,035	782,845
1881	2,995 948	1,124,955
1891	157 052	88,359
1901	716,559	400,208
1913	40,410	21 985
1914	64,190	32 241
1915	222,927	155 089
1916	232,763	274,088
1917	1,018,094	1,071,887
1918	502,088	879,414
1919	538,325	651,033
1920	330 175	399 263
1921	27,358	25,022
1922	29,850	19,160
1923	20,902	17,613
1924	20,669	22,996
1925	14,431	13,485
1926	11,544	12,919

Not stated after 1926.

Quinine Sulphate and Other Salts of Cinchona

	Ounces.	Dollars.
1922	355,181	219,534
1923	365,852	180,366
1924	328,998	184,149
1925	637,878	215,288
1926	314,926	162,682
1927	274,837	127,847
1928	247,620	110,586

Rosin, Gum

	Barrels (500 lbs.)	Dollars
1871	511,959	1,600,651
1881	1,023,710	2,529,423
1891	1,790,251	3,467,199
1901	2,820,813	4,742,457
1913	2,806,046	17,359,145
1914	2,417,950	11,217,316
1915	1,372,316	6,220,321
1916	1,571,279	8,874,313
1917	1,638,500	10,705,972
1918	1,070,929	7,878,718
1919	881,777	11,322,381
1920	1,322,034	24,847,681
1921	877,109	10,363,147
1922	1,403,721	6,623,499
1923	1,089,742	10,157,216
1924	1,205,038	10,659,679
1925	1,412,289	16,047,225
1926	1,086,040	21,815,412
1927	1,087,795	22,923,325
1928	1,154,841	17,662,322

Rosin, Wood

	Barrels. (500 lbs.)	Dollars.
1927	140,918	2,526,196
1928	144,840	1,956,416

Salt

	Pounds.	Dollars
1871	7,209,560	47,115
1881	2,739,300	14,752
1891	5,242,280	29,510
1901	14,183,167	67,316
1913	125,035,915	441,673
1914	148,981,265	542,788
1915	165,619,386	616,132
1916	165,687,801	600,648
1917	194,151,456	720,761
1918	267,045,840	1,416,798
1919	242,143,146	1,541,766
1920	257,493,745	1,610,061
1921	242,632,102	1,649,423
1922	257,884,879	1,521,529
1923	259,490,565	1,260,753
1924	261,232,700	1,198,242
1925	295,101,282	1,293,195
1926	319,422,301	1,297,568
1927	310,430,078	1,244,722
1928	280,763,366	1,216,482

Seed, Cotton

	Pounds.	Dollars
1871	.....	29,388
1881	75,693	3,031
1891	10,108,014	85,315
1901	43,329,257	366,053
1913	24,048,647	328,988
1914	16,342,384	215,115
1915	6,314,439	94,237
1916	2,475,907	37,811
1917	1,001,369	35,434
1918	1,565,052	57,698
1919	1,603,795	85,987
1920	3,506,218	197,450
1921	4,811,813	246,799
1922	2,355,318	83,755

Not stated after 1922.

Seed, Flax

	Bushels.	Dollars
1871	282	721
1881	.....	.....
1891	144,848	184,564
1901	2,755,683	4,319,102
1913	16,804	26,690
1914	205,546	328,874
1922	78,288,708	6,154,911
1915	4,145	9,748
1916	2,614	6,501
1917	1,017	3,671
1918	21,481	98,165
1919	15,574	110,142
1920	24,044	182,796
1921	1,481	4,879
1922	2,267	7,607

Not stated after 1922.

Soap, Laundry

	Pounds	Dollars
1923	68,742,844	4,828,790
1924	59,097,581	4,184,584
1925	54,456,663	3,859,856
1926	56,307,234	4,022,589
1927	63,328,826	4,200,770
1928	49,070,732	3,432,951

Soap, Toilet or Fancy

	Pounds.	Dollars
1871	.....	19,954
1881	.....	44,396
1891	.....	86,704
1901	.....	562,514
1913	.....	2,132,858
1914	.....	2,141,633
1915	.....	1,777,342
1916	.....	2,610,481
1917	.....	2,122,674
1918	.....	2,246,258
1919	.....	3,896,179
1920	.....	6,625,259
1921	.....	4,182,459
1922	7,565,881	2,869,007
1923	8,563,954	3,250,030
1924	5,618,714	2,460,670
1925	5,865,447	2,507,277
1926	8,082,255	3,050,802
1927	8,629,103	2,980,223
1928	8,316,494	2,743,969

Soap, Other

	Pounds	Dollars
1871	7,786,276	576,026
1881	13,323,737	650,361
1891	25,750,671	1,050,539
1901	28,779,000	1,008,666
1913	51,292,554	2,496,904
1914	58,547,763	2,797,369
1915	63,367,750	3,080,957
1916	75,548,686	3,709,277
1917	73,049,219	4,169,117
1918	82,726,757	6,894,464
1919	143,128,191	13,724,225
1920	155,801,588	16,102,825
1921	85,830,216	8,447,007
1923	16,231,584	1,462,451
1924	18,493,281	1,560,272
1925	15,603,908	1,373,042
1926	14,137,737	1,243,673
1927	13,045,720	1,178,887
1928	10,466,198	991,881

Soap Stock, Vegetable

	Pounds.	Dollars.
1923	3,610,593	238,977
1924	3,996,290	230,816
1925	6,166,826	335,500
1926	12,167,877	727,889
1927	11,171,088	620,003
1928	8,136,785	464,968

Soda Ash

	Pounds.	Dollars.
1918	198,752,457	6,074,879
1919	191,864,329	6,261,518
1920	116,555,500	2,804,130
1921	113,481,062	3,308,763
1922	33,090,180	757,648
1923	29,858,337	699,671
1924	26,404,428	673,735
1925	33,204,687	779,533
1926	34,701,719	835,755
1927	41,504,725	961,256

Not separately stated after 1927.

Soda Bicarbonate

	Pounds.	Dollars.
1920	11,998,510	360,601
1921	13,353,769	389,337
1922	14,803,631	347,233
1923	16,849,078	371,065
1924	15,920,717	357,494
1925	15,310,178	322,456
1926	19,391,529	393,780
1927	18,449,361	343,478
1928	19,319,843	355,974

Soda Bichromate and Chromate

	Pounds.	Dollars.
1925	3,496,145	211,166
1926	7,820,620	477,768
1927	9,461,452	595,950
1928	8,732,866	559,845

Soda, Carbonate (Soda Ash, Sal Soda and Washing Soda)

	Pounds.	Dollars.
1928	56,871,504	1,175,242

Soda Caustic

	Pounds.	Dollars.
1918	134,729,691	8,629,086
1919	127,192,309	6,382,511
1920	229,146,363	9,321,902
1921	101,021,827	5,478,055
1922	123,126,777	4,660,815
1923	115,834,650	4,061,858
1924	100,243,033	3,175,791
1925	94,806,930	2,849,278
1926	105,276,932	3,109,699
1927	104,919,887	3,117,134
1928	107,417,678	3,139,265

Soda Cyanide

	Pounds.	Dollars.
1922	1,248,294	235,224
1923	3,491,859	591,496
1924	3,620,819	552,769
1925	1,481,284	269,002
1926	1,917,807	310,581
1927	1,425,418	231,249
1928	1,479,719	242,056

Soda Salts and Preparations

		Dollars.
1915	.....	3,141,022
1916	.....	12,649,854
1917	.....	18,381,450

Not stated prior to 1915 and subdivided after 1917; see following classes

Soda, Sal

	Pounds.	Dollars.
1918	14,076,264	206,499
1919	10,675,870	186,382
1920	12,763,399	262,039
1921	10,376,424	207,539
1922	11,061,664	200,908
1923	12,185,928	186,550
1924	12,784,299	194,172
1925	12,459,512	176,515
1926	13,618,569	192,211
1927	12,746,736	163,288

Not stated separately after 1927.

Soda Silicate (Water Glass)

	Pounds.	Dollars.
1918	26,125,740	373,822
1919	26,009,043	400,508
1920	33,692,535	420,124
1921	23,099,660	321,972
1922	26,024,366	279,041
1923	31,430,252	308,562
1924	32,225,650	314,082
1925	36,089,562	321,238
1926	44,199,518	381,829
1927	50,766,700	408,325
1928	56,751,164	537,518

Soda, Other Salts of

	Pounds.	Dollars.
1918	.....	7,421,521
1919	.....	6,475,158
1920	.....	7,485,008
1921	.....	5,378,809
1922	97,518,434	2,439,113
1923	129,704,630	2,363,007
1924	121,116,444	2,173,981
1925	102,676,879	1,713,378
1926	100,750,268	1,563,362
1927	70,973,698	1,520,302
1928	87,195,704	1,466,140

Spices

	Pounds.	Dollars.
1891	.....	22,440
1901	.....	20,204
1914	.....	84,427
1915	.....	76,297
1916	.....	250,827
1917	.....	287,494
1918	.....	507,712
1919	.....	539,313
1920	.....	607,442
1921	.....	322,524
1922	1,363,252	167,241
1923	1,644,959	200,769
1924	1,667,842	195,563
1925	1,531,794	235,581
1926	1,166,986	202,986
1927	1,437,374	219,862
1928	1,356,669	247,838

Sponges

	Pounds.	Dollars.
1871	.....	1,546
1881	.....	6,786
1891	36,966	20,821
1901	63,654	32,554
1913	205,904	177,059
1914	209,470	173,866
1915	117,618	109,635
1916	197,826	165,884
1917	116,131	120,063
1918	130,471	177,216
1919	187,151	212,641
1920	298,021	307,123
1921	110,928	156,168
1922	114,229	141,050
1923	141,049	174,242
1924	122,271	122,446
1925	151,809	157,640
1926	100,359	140,967
1927	95,988	150,561
1928	133,661	185,333

Exports from the United States

Starch

	Pounds.	Dollars.
1871	1,761,813	115,698
1881	12,473,419	629,710
1891	12,883,821	475,817
1901	102,800,725	2,005,865
1913	110,987,591	2,609,716
1914	76,713,779	1,825,230
1915	107,036,638	2,939,453
1916	210,185,192	5,576,914
1917	146,423,822	4,721,533

Stated separately after 1917.

Starch, Cornstarch (Including Corn Flour)

	Pounds.	Dollars
1918	38,059,323	2,220,377
1919	105,726,970	5,333,480
1920	163,314,042	10,238,284
1921	110,514,424	4,251,173
1922	348,940,114	7,294,865
1923	254,060,008	6,741,443
1924	255,134,988	8,148,320
1925	209,865,494	7,222,626
1926	208,462,588	6,970,908
1927	212,374,880	6,502,640
1928	275,920,902	8,663,355

Starch, All Other

	Pounds.	Dollars
1918	35,223,390	2,282,015
1919	38,061,260	2,197,518
1920	74,293,884	4,675,096
1921	24,850,212	1,146,163
1922	37,932,600	903,786
1923	6,736,187	238,612
1924	7,707,391	277,840
1925	4,381,557	202,975
1926	16,106,601	513,928
1927	20,737,476	619,675
1928	5,467,065	217,148

Stearin from Animal Fats

	Pounds.	Dollars.
1871	.....	2,506
1881	1,118,848	87,924
1891	1,347,386	62,194
1915	11,457,907	1,083,665
1916	13,062,247	1,461,661
1917	12,936,357	1,798,317
1918	10,360,030	2,181,317
1919	11,537,284	2,309,979
1920	22,505,608	4,717,748
1921	19,177,311	2,429,414
1922	33,017,879	3,183,684

See "Oleo and Lard Stearin, Etc." after 1922.

Stearin, Vegetable

	Pounds.	Dollars.
1917	1,321,773	179,092
1918	1,226,127	248,585
1919	782,467	166,423
1920	5,138,225	962,394
1921	1,848,313	224,576
1922	1,949,422	194,596
1923	564,236	56,219
1924	175,998	24,874

Not stated separately after 1924.

Sulphur or Brimstone

	Tons.	Dollars
1913	73,861	1,353,310
1914	110,022	2,018,724
1915	48,391	885,756
1916	68,460	1,314,290
1917	177,548	3,595,512
1918	140,525	3,842,904
1919	123,891	3,731,386
1920	393,404	8,725,112
1921	376,046	6,546,639
1922	409,722	6,069,871
1923	470,900	6,985,861
1924	454,333	6,993,835
1925	536,911	8,900,383
1926	644,301	11,803,370
1927	670,221	13,240,726
1928	724,428	15,226,525

Sulphur, Refined, Sublimed, and Flowers

	Pounds.	Dollars.
1922	5,162,966	113,729
1923	5,166,092	128,523
1924	4,598,639	101,868
1925	5,334,938	127,478
1926	8,496,278	179,399
1927	21,232,120	398,126
1928	42,815,545	679,035

Talcum and Other Toilet Powders

	Pounds.	Dollars.
1922	3,642,604	1,397,542
1923	3,734,831	1,496,567
1924	3,314,013	1,609,905
1925	3,356,216	1,751,024
1926	3,493,828	1,912,676
1927	3,116,337	1,619,876
1928	3,239,011	1,651,377

Tallow

	Pounds.	Dollars.
1871	33,859,317	3,025,085
1881	96,403,372	6,800,628
1891	111,689,251	5,501,049
1901	77,166,889	3,848,561
1913	30,586,300	1,910,439
1914	15,812,831	1,002,011
1915	20,239,988	1,386,445
1916	16,288,743	1,326,472
1917	15,209,369	1,800,909
1918	5,014,964	981,941
1919	16,172,111	2,325,177
1920	32,937,026	5,738,181
1921	16,843,868	1,920,376
1922	31,376,275	2,210,762
1923	35,876,258	2,972,690
1924	37,371,722	2,946,676
1925	28,775,863	2,618,528
1926	12,221,438	1,130,743
1927	9,128,108	789,633
1928	4,824,489	428,570

Tanning Extracts, Chestnut

	Pounds.	Dollars.
1922	7,911,316	253,815
1923	7,856,713	268,698
1924	9,309,432	301,309
1925	7,814,685	241,970
1926	6,117,614	178,634
1927	6,671,425	195,309
1928	6,485,517	187,138

Tanning Extracts, Other (Vegetable and Chemical)

	Pounds.	Dollars
1922	22,612,678	1,051,163
1923	24,942,925	1,174,108
1924	23,400,416	1,148,249
1925	21,063,238	1,152,431
1926	22,976,856	1,188,242
1927	24,819,816	1,284,137
1928	40,518,892	2,088,936

Tar, Turpentine and Pitch

	Barrels.	Dollars
1871	32,584	93,884
1881	46,582	109,381
1891	25,806	46,274
1901	50,526	123,464
1914	351,352	568,891
1915	239,661	430,612
1916	67,963	201,731
1917	103,397	561,566
1918	82,030	598,211
1919	48,080	884,989
1920	61,790	554,175
1921	41,748	377,649
1922 (July 1 to Dec. 1)	9,817	65,158

Sub-divided after Dec. 31. See following

Tar and Pitch, Wood

	*Barrels. (500 lbs.).	Dollars.
1923	31,530	159,173
1923	34,499	204,974
1924	89,730	427,193
1924	28,238	189,274
1926	22,115	208,916
1927	27,240	273,477
1928	18,464	199,359

* Quantity stated in Barrels (280 lbs.) prior to 1927.

Tin Bars, Blocks or Pigs

	Pounds.	Dollars
1917	798,288	427,709
1918	209,391	127,219
1919	488,902	352,483
1920	829,016	500,086
1921	2,564,532	968,354
1922	1,455,977	432,571
1923	1,922,327	685,509
1924	998,860	430,317
1925	788,893	408,051
1926	1,024,165	555,420
1927	1,865,602	836,241
1928	1,868,279	664,095

Tobacco Extracts (Except Nicotine Sulphate)

	Pounds.	Dollars.
1927	1,483,205	447,735
1928	1,475,207	363,116

Tungsten, Manganese and Other Ferro-Alloys, N. E. S.

	Pounds.	Dollars.
1917	1,784,306	3,597,426
1918	2,184,769	4,056,437
1919	177,123	408,148
1920	17,494	57,820
1921	1,600	1,625
1922	303	13,189
1926	1,078	58,049
1924	1,582	67,301

Quantity in tons after 1921.
Not stated after 1924.

Turpentine, Gum Spirits

	Gallons.	Dollars
1871	2,453,554	1,009,508
1881	6,595,528	2,414,719
1891	12,243,621	4,668,140
1901	20,240,851	7,715,029
1913	21,039,597	8,794,656
1914	18,900,704	8,095,958
1915	9,464,120	4,476,306
1916	9,310,288	4,337,563
1917	8,841,875	4,313,670
1918	5,095,124	2,695,935
1919	8,083,579	6,069,853
1920	7,461,355	11,121,884
1921	9,741,711	11,279,253
1922	10,780,289	8,071,930
1923	9,012,356	11,480,400
1924	11,194,173	10,606,870
1925	12,308,274	10,984,515
1926	10,241,172	10,057,705
1927	13,820,989	11,193,268
1928	14,332,243	7,933,979

Turpentine Substitutes (Mineral Spirits)

	Gallons.	Dollars.
1924	1,003,893	423,945
1925	941,047	274,794
1926	1,415,607	348,931
1927	2,788,719	562,335
1928	1,874,609	444,725

Turpentine, Wood

	Gallons	Dollars
1922	494,576	342,430
1923	397,870	330,827
1924	493,911	425,586
1925	522,660	403,708
1926	707,028	533,164
1927	645,067	462,961
1928	957,117	492,738

Varnishes, Oil

	Gallons.	Dollars
1922	376,416	657,117
1923	501,274	876,397
1924	621,296	1,061,136
1925	668,790	1,191,308
1926	674,612	1,176,425
1927	545,941	1,004,942
1928	457,373	827,869

Varnishes, Other

	Gallons.	Dollars
1871	54,454	79,292
1881	87,408	156,617
1891	153,365	205,285
1901	606,187	611,459
1913	1,279,777	1,367,860
1914	1,069,501	1,088,564
1915	731,604	883,852
1916	846,362	883,339
1917	891,812	1,104,698
1918	736,949	1,209,762
1919	1,174,664	2,338,384
1920	1,529,592	2,965,950
1921	1,158,025	2,421,889
1922	611,255	1,024,279
1923	379,542	618,389
1924	344,198	579,068
1925	305,252	533,453
1926	485,899	897,433
1927	595,653	1,282,744
1928	645,230	1,231,142

Washing Powders and Fluids

	Pounds.	Dollars.
1913	9,923,700	756,762
1914	12,761,958	935,935
1915	14,695,317	995,476
1916	7,875,317	855,928
1917	3,517,441	197,614
1918	4,754,804	243,184
1919	3,984,745	281,786
1920	6,114,816	357,074
1921	4,021,497	267,597
1922	3,346,375	201,609
1923	4,661,606	269,445
1924	4,908,893	276,765
1925	4,679,249	278,682
1926	4,167,617	253,049
1927	5,939,900	321,817
1928	5,001,738	294,350

Water Bottles, Rubber, and Fountain Syringes

	Number.	Dollars.
1925	303,808	215,243
1926	270,267	199,256
1927	313,248	215,580
1928	365,025	239,069

Wood Preservatives

	Pounds.	Dollars.
1928	62,108	5,941

Yeast

	Pounds.	Dollars.
1901	.....	6,809
1917	.....	1,021,651
1918	.....	918,842
1919	.....	1,116,690
1920	.....	868,718
1921	.....	675,208
1922	896,963	96,137
1923	2,750,901	694,543
1924	2,514,815	667,069
1925	3,118,695	803,512
1926	3,575,375	921,374
1927	3,671,944	975,817
1928	3,566,501	637,989

Zinc Dross

	Pounds.	Dollars.
1901	.....	164,140
1914	572,477	29,084
1915	10,361,840	557,247
1916	2,526,288	164,649
1917	10,692,766	886,017
1918	31,104,163	2,283,845
1919	26,500,333	1,929,545
1920	4,097,465	269,997
1921	1,095,186	69,298
1922	10,567,684	373,891
1925	14,686,613	743,711
1926	28,689,439	1,454,075
1927	13,557,535	610,011
1928	8,704,947	307,520

Not stated for 1923 and 1924.

Zinc Dust

	Pounds.	Dollars.
1922	3,995,124	287,580
1923	5,578,922	400,264
1924	6,143,778	439,669
1925	4,372,803	356,827
1926	3,473,345	331,492
1927	2,445,450	246,112
1928	2,835,452	264,681

Zinc Oxide

	Pounds.	Dollars.
1871	1,082,362	48,292
1881	1,281,375	16,406
1891	8,172,000	142,011
1901	9,456,057	412,716
1914	29,197,790	1,215,360
1915	37,580,411	1,806,970
1916	31,222,228	1,960,589
1917	31,486,877	3,096,019
1918	25,862,063	2,750,619
1919	26,051,535	3,024,198
1920	30,925,243	2,885,933
1921	10,149,360	1,016,784
1922	6,726,285	521,180
1923	10,613,881	748,105
1924	7,528,004	607,134
1925	13,583,173	977,271
1926	24,602,425	1,683,806
1927	32,722,813	2,060,392
1928	26,510,889	1,671,429

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57-Year Record of Imports into the United States, 1871-1928

The following tables, compiled from official records, give import data, quantity and value for fiscal years to June 30, for all years for which figures are available, down to 1928. Where statistics are missing for any of the years indicated, it is due to the fact that official records were not kept, and the figures are, therefore, unavailable:

Abrasives, Pumice Stone, Unmanufactured

	Tons.	Dollars.
1871	.....	6,448
1881	.....	19,052
1891	.....	32,414
1901	.....	28,618
1913	5,556	44,474
1914	7,065	57,427
1915	6,060	47,469
1916	8,650	69,311
1917	7,205	76,620
1918	5,900	34,062
1919	1,139	17,196
1920	10,933	145,984
1921	4,488	64,213
1922	5,728	59,603
1923	10,339	72,867
1924	8,551	76,035
1925	8,663	88,954
1926	9,775	103,658
1927	7,791	85,797
1928	8,470	94,922

Abrasives, Pumice Stone, Wholly or Partially Manufactured

	Pounds.	Dollars.
1913	3,845,326	17,417
1914	6,484,875	28,280
1915	6,013,747	27,152
1916	5,616,012	44,186
1917	7,796,173	64,865
1918	3,238,776	34,262
1919	1,746,024	23,168
1920	6,303,302	53,853
1921	6,783,635	79,727
1922	3,871,541	28,457
1923	7,131,452	54,603
1924	5,224,781	37,231
1925	4,410,794	27,017
1926	6,728,267	38,344
1927	5,495,796	31,703
1928	5,999,319	40,829

Abrasives, Rottenstone

	Tons.	Dollars.
1919	13	1,486
1920	461	6,125
1921	90	4,747
1922	62	4,306

Not stated after 1922.

Abrasives, Rottenstone, Tripoli and Diatomaceous Earths

	Tons.	Dollars.
1881	.....	3,848
1891	.....	.....
1901	.....	24,556
1913	.....	30,621
1914	.....	20,858
1915	.....	24,796
1916	.....	38,613
1917	.....	23,315
1918	.....	14,551
1923	.....	13,759
1924	300	12,639
1925	147	5,791
1926	171	8,316

Stated separately 1919 to 1922.

Abrasives, Tripoli

	Tons.	Dollars.
1919	247	7,232
1920	411	9,483
1921	324	9,423
1922	320	7,918

Not stated after 1922.

Acenaphthene, Fluorene, Methyl-anthracene and Methyl-naphthalene

	Pounds.	Dollars.
1920	15,759	946
1921	.....	.....
1922	100	64
1923	23,739	2,843
1924	.....	.....
1925	.....	.....
1926	20,000	1,457
1927	52,224	13,791
1928	55,272	16,358

Acetaldehyde

	Pounds.	Dollars.
1924	64,822	10,815
1925	107,344	18,114
1926	321,125	48,400
1926	323,125	48,400
1927	122	57
1928	583	128

Acetanilide, Medicinal, Acetphenetidin and Acetylsalicyli.. Acid

	Pounds.	Dollars.
1914	1,060	164
1915	800	380
1916	.....	.....
1917	15	22
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	10	16
1922	20	12
1923	20	37
1924	38	50
1925	13	26
1926	95	175
1927	974	2,501
1928	981	1,451

Acetanilide, Not Medicinal

	Pounds.	Dollars.
1927	3,268	1,348
1928	.....	.....

Acetone, Acetone Oil, and Ethyl Methyl Ketone

	Pounds.	Dollars.
1914	2,760	307
1915	235,917	21,105
1916	179,497	14,424
1917	.....	.....
1918	148,082	28,910
1919	443,504	80,986
1920	.....	.....
1921	6,654	311
1922	155	57
1923	44,099	6,910
1924	63,721	9,088
1925	357,898	43,766
1926	325,274	33,803
1927	988,993	28,693
1928	55,862	6,541

Acetphenetidin (Phenacetin)

	Pounds.	Dollars.
1915	39,999	27,356
1916	203	1,332
1917	3,280	40,352
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	.....	.....
1923	.....	.....
1924	25	238
1925	300	1,020

Included in "Acetanilide, Medicinal," etc., after 1925.

Acid, Acetic Anhydride

	Pounds.	Dollars.
1913	309,645	51,632
1914	150,892	23,240
1915	3,652	1,019
1916	18,177	10,013
1917	9,060	7,485
1918	13,112	16,533
1919	10,948	14,780
1920	.....	.....
1921	.....	.....
1922	.....	.....
1923	2,350	638
1924	3,746	1,141
1925	6,208	1,728
1926	129,953	24,274
1927	50,027	12,315
1928	2,217	438

Acid, Acetic or Pyroligneous

	Pounds.	Dollars.
1871	146	120
1881	4,223	942
1891	10,946	1,036
1901	291,801	21,182
1913	39,648	3,036
1914	27,750	1,932
1915	315,850	16,419
1916	504,858	53,969
1917	201,604	28,492
1918	264,997	47,673
1919	1,252,649	224,482
1920	2,925,076	339,178
1921	859,755	108,090
1922	21,774	17,104
1923	269,960	31,325
1924	1,266,548	136,865
1925	2,108,787	239,298
1926	4,519,465	325,703
1927	9,660,854	673,046
1928	12,176,580	944,611

Acid, Acetylsalicylic (Aspirin)

	Pounds.	Dollars.
1914	22,841	11,873
1915	112,602	53,792
1916	229	311
1917	501	2,136
1918	1,100	3,300
1919	26	76
1920	.....	.....
1921	.....	.....
1922	.....	.....
1923	.....	.....
1924	1	7
1925	.....	.....

Included in "Acetanilide, Medicinal," etc., after 1925.

Acid, Aminosalicylic

	Pounds.	Dollars.
1920	11,199	8,182
1921	.....	.....
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	.....	.....

Not stated after 1925.

Acid, Arsenic

	Pounds.	Dollars.
1924	110,456	11,174
1925	28,200	1,512
1926	33,402	1,354
1927	210	71
1928	11,525	425

Acid, Arsenious, or White Arsenic

	Pounds.	Dollars.
1882	52,572	2,285
1891	.....	.....
1901	497,916	20,486
1913	5,164,768	203,525
1914	3,094,361	110,179
1915	2,789,531	106,530
1916	2,458,604	104,988
1917	1,984,480	159,429
1918	3,746,246	284,964
1919	7,074,429	611,398
1920	5,809,178	414,867
1921	6,733,163	511,098
1922	1,694,142	109,169
1923	13,235,646	1,225,961
1924	22,007,134	2,092,936
1925	17,363,079	1,187,249
1926	14,422,716	538,782
1927	23,754,152	794,023
1928	21,088,785	814,822

Acid, Benzoic, Medicinal

	Pounds.	Dollars.
1871	.....	5,571
1881	8,813	13,299
1891	.....	.....
1901	262,697	93,667
1913	863,015	133,887
1914	278,896	51,701
1915	132,686	25,442
1916	25,155	79,856
1917	13,547	52,986
1918	2,354	16,390
1919	125	1,114
1920	313	1,461
1921	240	165
1922	11,023	2,847
1923	200	775
1924	111	168
1925	431	279
1926	230	200
1927	261	187
1928	300	181

Acid, Boric

	Pounds.	Dollars.
1871	1,204,049	185,477
1881	187,053	15,771
1891	666,865	40,919
1901	648,994	23,485
1913	362,400	13,897
1914	527,201	22,390
1915	401,684	18,002
1916	424,219	22,145
1917	404,210	24,590
1918	195,650	14,087
1919	280,935	31,170
1920	253,958	11,165
1921	227,461	19,949
1922	1,046,926	82,785
1923	430,677	29,146
1924	259,837	14,640
1925	335,583	19,663
1926	202,593	13,593
1927	202,780	12,212
1928	279,298	15,404

Acid, Carbolic

	Pounds.	Dollars
1871	.....	8,671
1881	115,691	48,691
1891	1,140,924	134,234
1901	1,808,026	260,851

Stated separately for later years.

Acid, Carbolic (Not Phenol)

	Pounds.	Dollars.
1917	495,813	34,355
1918	127,574	11,198
1919	2,021,165	194,589
1920	157,319	13,243
1921	183,709	20,906
1922	315,406	31,075

Not stated after 1922.

Acid, Carbolic (Phenol)

	Pounds.	Dollars.
1913	8,345,631	688,771
1914	8,393,216	531,535
1915	3,106,445	179,685
1916	2,246,256	154,841
1917	772,667	66,878
1918	560,276	62,325
1919	95,861	31,963
1920	30	14
1921	1,260	372
1922	.....	361
1923	623,229	87,833

Stated separately after 1923.

Acid, Carbolic (Phenol) Crystal

	Pounds.	Dollars.
1924	151,421	41,271
1925	139,346	32,446
1926	297,632	66,455
1927	62,255	12,923
1928	1,033	197

Acid, Carbolic, Liquid (Cresol)

	Pounds.	Dollars.
1924	2,815	257
1925	429,230	43,089
1926	46,882	11,095
1927	26,733	5,636
1928	1,074,041	68,074

Acid, Chloroacetic

	Pounds.	Dollars.
1927	50	20
1928	5	6

Acid, Chromic and Anhydrides

	Pounds.	Dollars.
1871	.....	3
1881	124	89
1891	.....	1,742
1901	46,993	9,881
1913	8,522	1,682
1914	7,778	1,220
1915	6,505	1,394
1916	.....	.....
1917	.....	.....
1918	9,512	1,857
1919	.....	.....
1920	.....	.....
1921	1,100	90
1922	3,969	1,289
1923	7,020	2,481
1924	475	405
1925	34,976	5,455
1926	6,461	2,511
1927	10,174	4,120
1928	37,693	12,764

Acid, Cinnamic

	Pounds.	Dollars.
1924	112	389
1925	.....	.....

Not stated after 1925.

Acid, Citric

	Pounds.	Dollars.
1871	184,662	105,816
1881	38,983	19,750
1891	45,197	15,482
1901	76,805	23,039
1913	8,677	2,916
1914	652,210	204,347
1915	722,434	447,131
1916	171,877	107,603
1917	157,528	91,463
1918	196,590	126,066
1919	690,147	632,294
1920	1,621,577	1,426,195
1921	770,331	632,780
1922	1,624,892	609,198
1923	575,541	199,522
1924	907,259	263,086
1925	362,341	98,129
1926	292,470	81,753
1927	171,361	44,966
1928	4,759	1,148

Acid, Cresylic

	Pounds.	Dollars.
1926	3,632,457	195,182
1927	8,742,825	518,817
1928	9,478,406	613,915

Acid, Diethylbarbituric and Derivatives

	Pounds.	Dollars.
1928	26,074	216,111

Acid, Fluoric (Hydrofluoric)

	Pounds.	Dollars.
1901	242	15
1913	12	5
1914	305	22
1915	150	11
1916	17	38
1917	.....	.....
1918	4	3
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	.....	.....
1923	40	9
1924	157	32
1925	.....	.....
1926	10	5
1927	.....	.....
1928	61	70

Acid, Formic

	Pounds.	Dollars.
1913	502,685	22,414
1914	1,119,745	48,826
1915	534,895	30,641
1916	131,719	19,627
1917	385,463	95,074
1918	.....	.....
1919	.....	.....
1920	210,021	46,922
1921	413,867	66,775
1922	124,964	11,219
1923	1,145,046	82,228
1924	1,290,637	106,688
1925	1,459,354	106,761
1926	2,086,914	131,643
1927	2,879,023	201,847
1928	2,575,336	194,814

Acid, Gallic

	Pounds.	Dollars.
1871	50	70
1881	16	31
1891	.....	.....
1901	21,461	9,704
1913	51,326	17,096
1914	61,635	20,429
1915	41,558	14,992
1916	5,101	1,985
1917	.....	.....
1918	8,643	9,708
1919	22	26
1920	.....	.....
1921	.....	.....
1922	7,750	3,291
1923	6,048	2,742
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Acid, Glycerophosphoric, Salts and Compounds

	Pounds.	Dollars.
1914	24,789	23,068
1915	15,938	17,678
1916	7,668	8,242
1917	5,853	9,249
1918	961	1,884
1919	2,630	6,967
1920	7,143	12,451
1921	8,287	10,229
1922	3,264	2,716
1923	18,952	18,524
1924	42,808	59,400
1925	47,626	54,350
1926	65,266	56,013
1927	47,282	49,780
1928	39,808	47,132

Acid, Hydrochloric (Muriatic)

	Pounds.	Dollars.
1871	.....	3,595
1881	.....	.....
1891	.....	.....
1901	16,278	430
1913	440	14
1914	254,480	1,450
1915	3,532,076	20,894
1916	4,215,491	27,292
1917	1,108,308	8,191
1918	2,254,210	18,449
1919	3,648,095	37,989
1920	4,454,308	56,828
1921	4,101,080	48,584
1922	7,015	491
1923	154,033	1,502
1924	905,900	8,440
1925	845,227	7,232
1926	1,652,800	10,318
1927	102,495	956
1928	364,050	2,094

Acid, Lactic

	Pounds.	Dollars.
1913	158,754	19,029
1914	276,237	30,423
1915	143,291	26,787
1916	77,845	10,930
1917	100	160
1918	330	544
1919	.....	.....
1920	17,939	6,517
1921	301,784	77,342
1922	682,392	55,027
1923	182,320	23,792

Subdivided after 1923.

Acid, Lactic, Containing Less Than 30% of Lactic

	Pounds.	Dollars.
1925	12,255	4,354
1926	31,847	3,958
1927	.....	.....
1928	.....	.....

Acid, Lactic, Containing 30% to 55% of Lactic

	Pounds.	Dollars.
1924	192,108	10,963
1925	258,830	13,145
1926	613,873	45,615
1927	404,828	27,559
1928	216,967	14,366

Acid, Lactic, Containing 55% or More of Lactic

	Pounds.	Dollars.
1924	58,897	12,375
1925	119,940	36,065
1926	77,534	24,956
1927	234,399	76,391
1928	237,538	71,984

Imports Into the United States

Acid, Nitric

	Pounds.	Dollars.
1871	.....	2,278
1881	.....	45
1891	.....	.....
1901	45,857	934
1913	100	8
1914	.....	.....
1915	356,558	17,776
1916	224,699	11,487
1917	13	2
1918	9,444,028	665,071
1919	8,000,867	589,501
1920	.....	.....
1921	47,754	4,180
1922	23,545	1,970
1923	76,620	3,949
1924	.....	.....
1925	2,067	372
1926	447,058	8,089
1927	1	2
1928	135,715	5,685

Acid, Nitric and Sulphuric Mixed

	Pounds.	Dollars.
1926	226,472	1,364
1927	150	25
1928	.....	.....

Acid, Oleic or Red Oil

	Pounds.	Dollars.
1924	30,488	4,059
1925	41,943	5,334
1926	31,693	4,257
1927	65,573	6,989
1928	50,273	6,052

Acid, Oxalic

	Pounds.	Dollars.
1871	414,044	61,613
1881	833,407	69,908
1891	2,743,222	200,595
1901	5,622,909	300,879
1913	8,046,380	402,960
1914	8,780,857	433,783
1915	4,496,679	262,422
1916	522,549	166,117
1917	1,183,256	527,827
1918	757,565	311,290
1919	456,698	154,041
1920	1,375,550	372,982
1921	1,824,867	482,758
1922	22,715	3,314
1923	2,839,217	228,285
1924	2,397,579	169,591
1925	3,196,643	156,608
1926	2,028,302	88,392
1927	1,845,723	89,150
1928	1,200,222	69,091

Acid, Phenylglycinorthocarboxylic

	Pounds.	Dollars.
1924	17,376	74,492
1925	.....	.....

Not stated after 1925.

Acid, Phosphoric

	Pounds.	Dollars.
1901	175,910	31,841
1913	504,388	76,907
1914	528,827	63,222
1915	265,193	39,120
1916	71,568	12,937
1917	13,666	4,225
1918	17,711	7,644
1919	6,431	4,186
1920	80,160	27,837
1921	253,700	68,189
1922	197,994	36,941
1923	358,573	45,043
1924	125,350	12,794
1925	201,323	20,182
1926	118,259	13,862
1927	503,532	53,132
1928	555,821	57,324

Acid, Phthalic

	Pounds.	Dollars.
1901	81,336	17,560
1913	75,695	20,511
1914	63,574	15,597
1915	17,925	4,498
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	.....	.....
1923	2,205	619
1924	.....	.....
1925	.....	.....

Not stated after 1925.

Acid, Pyrogallic

	Pounds.	Dollars.
1901	.....	37,789
1913	9,512	9,278
1914	23,615	20,490
1915	10,564	9,514
1916	169	227
1917	.....	.....
1918	275	547
1919	.....	.....
1920	.....	.....
1921	899	2,094
1922	11	20
1923	252	393
1924	11	24
1925	11	21
1926	.....	.....
1927	.....	.....
1928	.....	.....

Acid, Salicylic, and Salts of, Not Medicinal

	Pounds.	Dollars.
1924	1,100	847
1925	1,757	521

Not stated after 1925.

Acid, Salicylic, and Salts of, Medicinal

	Pounds.	Dollars.
1901	222,761	76,786
1913	31,844	6,500
1914	18,821	4,425
1915	82,617	24,402
1916	160	386
1917	5,033	3,114
1918	21,354	20,883
1919	5	2
1920	.....	.....
1921	.....	.....
1922	2,240	1,775
1923	43	113
1924	4	55
1925	561	640
1926	137	3,343
1927	94	637
1928	201	1,377

Acid, Silicic

	Pounds.	Dollars.
1901	25	3
1913	121,344	6,486
1914	.....	.....
1915	3,086	586
1916	15	6
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	110	17
1922	210	32
1923	100	17

Not stated after 1923.

Acid, Stearic

	Pounds.	Dollars.
1891	.....	2,638
1901	.....	.....
1913	119,619	12,160
1914	100,088	9,593
1915	32,795	3,465
1916	40,979	6,029
1917	538	75
1918	.....	.....
1919	.....	.....
1920	4,044	867
1921	12,662	1,750
1922	25,919	2,170
1923	352,150	37,694
1924	292,705	34,506
1925	445,686	58,754
1926	2,393,330	296,741
1927	609,926	71,764
1928	1,365,473	137,029

Acid, Sulphuric, or Oil of Vitriol

	Pounds.	Dollars.
1871	8,509	642
1881	3,841	276
1891	15,377	836
1901	79,120	2,335
1913	34,624	512
1914	6,725,999	49,559
1915	7,382,139	44,008
1916	6,286,490	61,352
1917	667,008	6,617
1918	2,822,527	355,934
1919	11,339,480	100,489
1920	9,221,723	79,204
1921	10,366,450	93,927
1922	4,915,213	54,727
1923	18,362,693	158,244
1924	17,196,506	144,376
1925	20,154,502	146,841
1926	60,797,446	327,953
1927	45,050,353	249,312
1928	26,063,772	154,495

Acid, Tannic, Containing Less Than 50% Tannic

	Pounds.	Dollars.
1925	27,199	3,828
1926	87,907	14,830
1927	62,522	8,023
1928	46,610	7,148

Acid, Tannic, Not Medicinal, 50% or More Tannic

	Pounds.	Dollars.
1925	41,284	10,661
1926	63,421	16,698
1927	122,857	33,601
1928	49,905	13,863

Acid, Tannic, Medicinal, 50% or More Tannic

	Pounds.	Dollars.
1871	21	26
1881	1,041	469
1891	659	239
1901	2,007	1,092
1913	1,540	768
1914	12,892	4,326
1915	49,493	17,047
1916	2,229	684
1917	160	41
1918	5,442	1,424
1919	96,831	41,675
1920	33,458	20,169
1921	46,934	21,735
1922	19,518	8,236
1923	88	75
1924	3	19
1925	.....	.....
1926	.....	.....
1927	1,120	491
1928	75	91

Acid, Tartaric

	Pounds.	Dollars.
1871	288,525	85,830
1881	64	33
1891	1,511	468
1901	1,068	299
1913	78,942	15,747
1914	848,575	203,850
1915	820,105	275,880
1916	198,873	84,373
1917	268,180	162,478
1918	384,262	231,099
1919	321,256	218,441
1920	798,667	529,231
1921	2,103,131	1,004,349
1922	3,074,283	756,696
1923	1,878,891	454,047
1924	3,249,082	720,690
1925	2,783,088	568,909
1926	2,847,958	578,890
1927	2,250,908	467,727
1928	1,889,277	514,780

Acid, Tetrachlorophthalic

	Pounds.	Dollars.
1925	441	600

Not stated after 1925.

Acid, Valerianic

	Pounds.	Dollars.
1901	1,172	818
1913	1,019	860
1914	1,161	750
1915	2,163	1,774
1916	600	399
1917	50	491
1918	845	5,011
1919	.....	.....
1920	700	2,278
1921	435	1,342
1922	.....	.....
1923	540	827
1924	.....	.....
1925	222	352
1926	62,685	6,699
1927	725	1,057
1928	2,532	2,364

Acids and Acid Anhydrides, Not Specially Provided For

	Pounds.	Dollars.
1871	.....	93,215
1881	.....	350,080
1891	.....	380,054
1901	.....	42,888
1913	.....	86,539
1914	.....	94,076
1915	.....	73,848
1916	.....	36,430
1917	.....	85,257
1918	.....	510,091
1919	14,025	58,915
1920	52,758	25,200
1921	106,746	28,096
1922	226,956	57,361
1923	1,306,932	92,725
1924	116,701	15,202
1925	96,839	21,689
1926	1,403,585	196,723
1927	858,567	131,375
1928	505,668	103,485

Aconite, Crude

	Pounds.	Dollars.
1871	19,591	1,586
1881	5,883	455
1891	2,761	266
1901	1,130	113
1913	12,946	1,065
1914	4,267	321
1915	8,823	962
1916	6,720	538
1917	34,285	8,724
1918	475	119
1919	22,320	4,462
1920	31,471	8,881
1921	10,854	2,452
1922	10,645	1,367
1923	25,464	5,262
1924	37,330	6,775
1925	21,730	5,340
1926	25,724	4,568
1927	115,963	31,613
1928	27,320	3,970

Aconitine, Salts and Derivatives

	Ounces.	Dollars.
1925	18	232

Not stated after 1925.

Acorns, Crude

	Pounds.	Dollars.
1913	7,165	210
1914	3,613	208
1915	4,395	198
1916	.....	.....
1917	2,420	41
1918	550	36
1919	.....	.....
1920	22,680	900
1921	1,048	98
1922	.....	.....
1923	.....	.....
1924	1,784,481	65,122
1925	4,006,771	142,471
1926	3,670,800	116,918
1927	2,292,358	59,148
1928	190,269	17,350

Acorns, Ground or Prepared

	Pounds.	Dollars.
1925	805,675	35,984
1926	463,025	19,787
1927	656,962	29,560
1928	973,881	41,629

Agar-Agar

	Pounds.	Dollars.
1914	189,232	54,319
1915	344,119	92,809
1916	332,931	110,410
1917	431,622	162,527
1918	246,988	91,442
1919	338,307	172,832
1920	443,116	247,404
1921	199,584	98,722
1922	417,979	185,139
1923	872,380	337,876
1924	412,113	435,236
1925	525,038	499,479
1926	372,368	291,841
1927	428,295	285,556
1928	400,950	261,014

Albumen, Egg or Blood

	Pounds.	Dollars.
1871	.....	135,017
1881	.....	215,555
1891	.....	119,441
1901	396,314	110,702
1913	1,246,744	406,594
1914	1,574,271	487,905

Stated separately after 1914; see following classes.

Albumen, Egg, Dried

	Pounds.	Dollars.
1915	1,269,398	402,996
1916	1,670,996	751,976
1917	2,669,254	1,443,936
1918	3,727,998	2,450,143
1919	1,427,240	1,141,431
1920	4,716,241	5,184,229
1921	2,568,240	2,606,352
1922	2,911,347	1,494,659
1923	2,371,447	1,302,156
1924	3,172,794	1,939,708
1925	3,147,661	2,280,208
1926	3,421,869	2,676,698
1927	3,777,481	2,516,184
1928	2,833,957	1,743,475

Albumen, Egg, Frozen or Otherwise Prepared

	Pounds.	Dollars.
1915	691,081	92,307
1916	1,451,376	201,509
1917	2,989,685	816,762
1918	2,014,629	250,132
1919	1,744,511	197,658
1920	2,875,639	587,368
1921	4,461,999	618,953
1922	3,844,804	475,976
1923	3,039,965	500,341
1924	1,328,892	163,901
1925	2,929,570	348,831
1926	3,879,912	471,930
1927	3,102,312	429,039
1928	847,628	129,317

Albumen, Not Otherwise Provided For

	Pounds.	Dollars.
1913	15,831	3,421
1914	382,589	58,175
1915	258,057	43,945
1916	81,787	25,615
1917	106,200	34,057
1918	671	260
1919	1,242	768
1920	37,030	21,395
1921	7,651	3,707
1922	103,481	31,130
1923	186,315	51,212
1924	218,756	47,036
1925	150,527	50,216
1926	198,288	73,809
1927	294,573	101,226
1928	258,357	62,699

Alcohol, Amyl

	Pounds.	Dollars.
1924	26,508	12,377
1925	53,075	17,505
1926	5,354	2,105
1927	4,307	1,173
1928	8,176	2,627

Alcohol, Butyl

	Pounds.	Dollars.
1924	896,265	201,698
1925	974,047	213,176
1926	1,489,113	239,894
1927	17,428	2,619
1928	34,816	7,048

Alcohol, Ethyl (Pure Grain)

	Proof gallons.	Dollars.
1891	8,794	7,623
1901	.....	.....
1913	135,250	22,780
1914	109,830	19,365
1915	40,532	5,707
1916	59,198	7,285
1917	4	6
1918	60	20
1919	290	288
1920	.....	.....
1921	27	34
1922	.....	.....
1923	3	2
1924	.....	.....
1925	8	10
1926	.....	.....
1927	120	648
1928	190	855

Alcohol, Ethyl (Denatured) Product of Virgin Islands

	Proof gallons.	Dollars.
1927	60,536	32,500
1928	165,960	120,965

Alcohol, Ethyl (Denatured) from Other Countries

	Proof gallons.	Dollars.
1926	375	260
1927	.....	.....
1928	3,125	1,950

Alcohol, Methyl

(See Methanol)

Alcohol, Propyl

	Pounds.	Dollars.
1925	32,433	11,692
1926	8,623	2,954
1927	40,079	9,157
1928	14,397	2,920

Aldol or Acetaldol

	Pounds.	Dollars.
1927	220	44
1928	70	15

Alizarin, Natural or Artificial, and Dyes Derived Therefrom

	Pounds.	Dollars.
1881	.....	806,539
1891	344,492	674,919
1901	4,046,986	713,392
1913	8,219,987	1,824,973
1914	806,764	246,196

Stated as following class after October 3, 1913.

Alizarin and Derivatives, Natural or Synthetic, and Dyes Derived from

	Pounds.	Dollars.
1914	1,828,074	599,648
1915	5,992,878	1,588,367
1916	71,834	44,282
1917	99,057	127,240

Stated separately after 1917.

Alizarin Assistant, Etc., and Soaps Containing Castor Oil, Etc.

	*Pounds.	Dollars.
1891	1,469	818
1901	24,716	11,335
1913	137,187	62,923
1914	186,294	72,430
1915	48,376	18,820
1916	7,382	4,134
1917	5,193	3,010
1918	24	24
1919	47,008	32,121
1920	27	29
1921	1,147	711
1922	1,187	708
1923	15,802	1,855
1924	29,310	2,319
1925	24,879	2,119
1926	40,538	5,017
1927	225,857	7,460
1928	98,757	4,841

* Quantity stated in gallons prior to 1923.

Alizarin, Natural

	Pounds.	Dollars.
1918	115,133	160,775
1919	1,741	5,155
1920	4,943	3,457
1921	77,551	62,404
1922	62,928	116,773
1923	14,795	25,323
1924	8,286	12,754
1925	2,961	3,531
1926	3,372	5,022
1927	1,129	1,498
1928	.....	.....

Alizarin, Synthetic

	Pounds.	Dollars.
1918	19,180	55,179
1919	.....	.....
1920	58,810	18,785
1921	122,246	45,221
1922	36,736	18,510
1923	15,175	17,052
1924	.....	.....
1925	3,092	12,008
1926	.....	.....
1927	1,406	711
1928	25	48

Alizarin Colors or Color Lakes

	Pounds.	Dollars.
1918	2,540	11,209
1919	6,284	9,121
1920	19,634	17,161
1921	144,076	204,859
1922	61,452	46,411

Not stated after 1922.

Alizarin Dyes

	Pounds.	Dollars.
1918	2,759	10,656
1919	4,025	3,397
1920	19,398	9,475
1921	89,011	117,986
1922	328,900	529,502

Not stated after 1922.

Alizarin Colors and Dyes

	Pounds.	Dollars.
1923	246,550	353,490
1924	259,589	322,611
1925	19,068	34,616
1926	25,651	62,654
1927	48,520	48,246
1928	5,410	5,560

Imports Into the United States

Aloes, Crude

	Pounds.	Dollars.
1871	204,272	25,710
1881	171,303	24,878
1891	372,764	22,532
1901	841,130	29,048
1913	909,279	77,936
1914	918,402	64,986
1915	953,186	90,061
1916	1,597,811	152,146
1917	1,236,381	97,007
1918	1,230,595	96,846
1919	1,544,940	127,857
1920	1,771,344	175,048
1921	966,428	78,456
1922	955,009	58,454
1923	1,528,792	82,264
1924	901,698	80,616
1925	1,182,430	96,557
1926	1,148,548	102,564
1927	1,189,742	107,312
1928	1,087,884	117,210

Althea or Marshmallow Flowers and Leaves, Crude

	Pounds.	Dollars
1913	501	27
1914	.....	.....
1915	4,095	245
1916	8,161	1,126
1917	21,713	2,063
1918	10,770	1,239
1919	4,869	770
1920	48,526	10,566
1921	13,699	1,524
1922	.....	.....
1923	17,122	1,329
1924	9,282	439
1925	4,424	282
1926	10,287	909
1927	13,413	1,118
1928	15,724	1,378

Althea or Marshmallow Root, Crude

	Pounds.	Dollars.
1913	4,270	538
1914	6,049	514
1915	6,645	1,206
1916	7,282	1,926
1917	23,120	5,346
1918	24,000	6,000
1919	13,910	5,516
1920	69,099	17,909
1921	25,496	5,491
1922	3,710	493
1923	2,113	397
1924	7,773	1,397
1925	17,515	1,892
1926	10,599	1,883
1927	14,862	2,949
1928	10,697	2,015

Althea or Marshmallow Root, Leaves and Flowers Advanced in Value

	Pounds.	Dollars.
1928	15,955	4,086

Alumina Hydroxide (Refined Bauxite)

	Pounds.	Dollars.
1901	4,584,477	199,950
1913	2,252,156	97,812
1914	1,989,027	26,328
1915	202,966	3,680
1916	418	260
1917	.....	.....
1918	94,278	7,562
1919	.....	.....
1920	.....	.....
1921	2,549	963
1922	15,816	549
1923	2,063,043	57,328
1924	672,629	35,656
1925	543,093	40,847
1926	445,584	29,246
1927	210,065	17,304
1928	241,584	16,086

Alum, Alum Cake, Patent Alum, Sulphate of Alumina and Aluminous Cake

	Pounds.	Dollars.
1871	4,712,840	74,450
1881	2,096,960	52,351
1901	4,052,995	58,864
1903	2,120,119	21,179
1913	4,129,160	39,944
1914	4,119,481	47,759
1915	3,904,564	41,106
1916	2,662,693	45,491
1917	1,696,996	56,768
1918	996,708	32,770
1919	220,967	7,915
1920	1,062,041	37,771
1921	3,069,682	71,135
1922	3,795,551	71,721
1923	2,750,253	48,192

Stated separately after 1923

Aluminum Sulphate, Alum Cake, or Aluminous Cake

	Pounds.	Dollars.
1924	197,085	3,141
1925	1,577,174	17,661
1926	1,929,100	20,704
1927	1,677,660	21,996
1928	1,093,744	11,685

Aluminum, Crude, Scrap, and Alloy

	Pounds.	Dollars.
1871	.....	341
1881	517	6,071
1891	10,383	15,582
1901	62,342	29,198
1913	26,942,112	4,247,590
1914	16,421,076	2,801,911
1915	13,925,919	2,364,044
1916	8,203,895	1,823,106
1917	1,904,000	558,897
1918	1,503,360	480,782
1919	5,543,784	1,748,691
1920	30,853,386	9,595,122
1921	35,626,274	9,015,422
1922	24,697,080	4,805,767
1923	47,619,231	8,541,049
1924	36,923,348	6,609,026
1925	26,191,782	5,998,045
1926	66,470,355	15,430,256
1927	67,666,489	15,072,461
1928	51,787,740	10,848,665

Aluminum Leaf

	*Leaves (5½x5½ Inches)	Dollars.
1891	9,768	1,109
1901	102	66
1913	3,531	1,811
1914	1,385	141
1915	15,240	1,901
1916	39,120	5,495
1917	19,161	3,706
1918	50,880	11,636
1919	95,475	19,445
1920	118,150	25,572
1921	243,510	45,789
1922	87,359	10,143
1923	362,206	27,583
1924	183,149	22,563
1925	21,158,667	29,535
1926	28,854,330	38,968
1927	23,265,971	31,818
1928	19,969,560	28,453

* Quantity stated as 100 leaves prior to 1925.

Aluminum Foil

	Pounds.	Dollars.
1924	20,553	17,466
1925	31,932	22,473
1926	135,036	109,615
1927	477,749	252,896
1928	1,155,880	662,267

Aluminum Powder and Powdered Foil

	Pounds.	Dollars.
1924	123,723	53,544
1925	68,891	31,784
1926	79,849	40,329
1927	104,906	42,578
1928	156,321	67,592

Aluminum Salts and Compounds, N.E.S.

	Pounds.	Dollars.
1925	27,297	9,426
1926	92,206	30,983
1927	337,353	27,736
1928	226,549	15,421

Ambergris Containing Less Than 10 Per Cent. Alcohol

	Pounds.	Dollars.
1881	.....	55
1891	71	3,731
1901	27	4,266
1913	608	10,964
1914	32	695
1915	1	87
1917	160	2,771
1918	204	3,643
1919	494	1,097
1920	48	540
1921	20	916
1922	109	12,655
1923	32	4,355
1924	53	10,927
1925	211	78,868
1926	110	26,262
1927	365	56,251
1928	285	70,902

Aminonaphthol, Aminophenol and Aminophenetol

	Pounds.	Dollars.
1919	590	1,475
1920	438	942
1921	14,623	11,699
1922	.....	.....
1923	32	4,355
1924	.....	.....
1925	.....	.....
1926	400	497
1927	.....	.....
1928	.....	.....

Ammonia Aldehyde

	Pounds.	Dollars.
1924	20	8
1925	2,094	796
1926	910	348
1927	253	78
1928	.....	.....

Ammonia, Carbonate and Bicarbonate

	Pounds.	Dollars
1871	1,346,448	112,303
1881	315,537	42,363
1891	912,886	62,293
1901	181,701	12,204
1913	258,376	16,173
1914	391,981	25,195
1915	784,821	49,122
1916	357,280	23,018
1917	244,840	18,294
1918	76,160	6,732
1919	85,762	15,757
1920	271,787	32,288
1921	288,820	21,897
1922	742,067	38,008
1923	742,849	43,816
1924	825,476	48,256
1925	737,544	43,723
1926	625,555	39,322
1927	671,811	42,596
1928	1,026,735	56,008

Ammonia, Chloride (Sal Ammoniac)

	Pounds	Dollars
1871	1,083,496	79,551
1881	1,281,867	107,976
1891	3,609,583	195,078
1901	4,772,364	245,163
1913	10,387,148	504,330
1914	9,254,539	470,566
1915	4,788,325	241,713
1916	1,965,464	122,174
1917	1,856,696	178,274
1918	1,000,262	97,994
1919	648,901	92,942
1920	5,295,692	563,130
1921	4,502,056	445,705
1922	6,647,610	338,555
1923	3,240,055	174,996
1924	4,073,043	193,574

Stated separately after 1924.

Ammonia, Chloride, Gray

	Pounds.	Dollars.
1925	2,230,667	100,919
1926	864,627	33,676
1927	2,039,798	79,360
1928	2,831,796	90,168

Ammonia, Chloride, White

	Pounds.	Dollars.
1925	9,488,578	420,100
1926	10,014,027	403,078
1927	15,714,506	590,225
1928	8,056,984	269,114

Ammonia, Liquid Anhydrous

	Pounds.	Dollars
1891	14,210	5,870
1901	.....	.....
1913	.....	.....
1914	.....	.....
1915	307	35
1916	.....	.....
1917	200	46
1918	2,698	1,039
1919	.....	.....
1920	12,512	4,305
1921	14,038	6,120
1922	102	48
1923	107,844	4,203
1924	11,033	560
1925	176	26
1926	400	16
1927	.....	.....
1928	.....	.....

Ammonia, Nitrate

	Pounds.	Dollars.
1914	2,766,000	132,849
1915	2,274,000	103,907
1916	.....	.....
1917	87,300	4,015
1918	74,101	4,287
1919	15,755	1,871
1920	18,202,080	1,380,153
1921	28,417,408	1,823,363
1922	44,724,215	2,628,308
1923	22,732,660	1,433,472
1924	1,747,333	98,686
1925	10,077,410	266,329
1926	11,650,352	576,765
1927	10,453,895	432,537
1928	9,093,212	468,348

Ammonia, Perchlorate

	Pounds.	Dollars.
1914	70,253	6,337
1915	72,576	6,515
1916	.....	.....
1917	275	53
1918	465	165
1919	1,768	402
1920	452,356	85,649
1921	4,502,050	413,470
1922	3,888,039	298,780
1923	496,683	23,635
1924	890,735	29,046
1925	106,501	7,233
1926	448	52
1927	23,467	1,942
1928	13,467	755

Ammonia, Phosphate

	Pounds.	Dollars.
1913	7,433	493
1914	205,764	13,462
1915	71,782	5,394
1916	810	40
1917	1,000	206
1918	1,316	336
1919	.....	.....
1920	.....	.....
1921	14,232	1,787
1922	27,947	2,980
1923	409,182	38,556
1924	57,387	6,246
1925	109,480	9,932
1926	147,664	15,289
1927	491,111	23,812
1928	151,538	13,684

Ammonia, Sulphate

	Tons.	Dollars.
1891	9,950	483,196
1901	14,846	694,454
1913	61,113	3,660,064
1914	83,597	4,900,058
1915	64,417	3,215,139
1916	19,404	1,371,007
1917	8,176	647,271
1918	3,983	497,999
1919	1,964	288,469
1920	2,586	343,107
1921	2,537	226,300
1922	6,356	314,269
1923	1,879	121,673
1924	5,851	337,032
1925	21,188	1,198,428
1926	13,340	724,067
1927	3,470	205,568
1928	33,201	1,474,305

Ammonia Sulphate-Nitrate

	Tons.	Dollars.
1927	12,203	815,276
1928	69,404	4,011,501

Ammonium-Aluminum Sulphate or Ammonia Alum

	Pounds.	Dollars.
1924	254,073	4,881
1925	79,341	1,323
1926	245,812	5,026
1927	210,678	3,566
1928	155,838	3,258

Anethol, Citral, Geraniol, Heliotropine Terpineol, Etc.

	Pounds.	Dollars.
1928	211,749	62,071

Anilin Oil

	Pounds.	Dollars.
1871	.....	169
1881	69,899	18,556
1891	1,489,906	299,662
1901	1,530,959	145,268
1913	2,015,318	171,047
1914	1,444,772	116,628
1915	1,407,305	240,165
1916	104,836	28,130
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	220	72
1922	11,243	1,799

Not stated after 1922.

Anilin Salts

	Pounds.	Dollars.
1881	.....	66,152
1891	.....	713,732
1901	7,575,515	589,535
1913	4,976,106	371,198
1914	3,083,467	222,728
1915	895,439	130,280
1916	16,084	3,978
1917	.....	.....
1918	21,273	3,250
1919	.....	.....
1920	.....	.....
1921	4	1
1922	18,316	12,109

Not stated after 1922.

Anilin Oil and Salts

	Pounds.	Dollars.
1923	85	231
1924	.....	.....
1925	.....	.....
1926	500	130
1927	1,440	1,404
1928	35,260	23,147

Annatto, and All Extracts of

	Pounds.	Dollars.
1871	.....	32,457
1881	270,597	37,639
1891	696,429	25,724
1901	412,125	13,498
1913	405,024	19,991
1914	507,250	25,341
1915	809,908	53,174
1916	603,271	69,811
1917	669,445	78,017
1918	749,782	73,294
1919	205,059	12,549
1920	917,932	38,927
1921	697,333	25,133
1922	856,731	34,226
1923	478,479	35,702
1924	265,691	53,202
1925	496,086	65,589
1926	570,543	39,608
1927	660,490	31,377
1928	605,186	33,976

Anthracene and Anthracene Oil

		Dollars.
1914	.....	32,175
1915	.....	49,949
1916	.....	2,551
1917	.....	2,258

Stated separately after 1917; see following classes.

Anthracene

	Pounds.	Dollars.
1918	.....	.....
1919	95,025	3,008

Stated separately after 1919; see below.

Anthracene, Purity Less Than 30 Per Cent

	Pounds.	Dollars
1920	7,551	506
1921	197,367	17,012
1922	80,562	687
1923	240,380	8,045
1924	859,217	22,373
1925	514,561	9,394
1926	468,385	8,619
1927	23,241	589
1928	112,585	2,293

Anthracene, Purity of 30 Per Cent. or More

	Pounds.	Dollars
1920	30,439	7,018
1921	822,740	98,448
1922	.....	.....
1923	2	2
1924	.....	.....
1925	.....	.....
1926	323	126
1927	.....	.....
1928	.....	.....

Anthracene Oil

	Gallons.	Dollars
1918	11,900	2,010
1919	11,185	2,260
1920	12,604	3,284
1921	18,405	6,725
1922	8,513	2,050
1923	26,845	5,401
1924	22,995	5,670
1925	17,343	2,842
1926	14,538	2,140
1927	9,623	1,044
1928	18,004	4,107

Anthracene and Carbazole Derivatives (except oil) and Colors and Dyes Derived Therefrom

	Pounds.	Dollars
1917	339,300	426,198
1918	35,733	28,018
1919	65,808	82,720
1920	84,751	120,774
1921	464,042	704,954
1922	439,282	828,746
1923	285,744	305,836
1924	4,276	4,330
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Anthraquinone, Aminoanthraquinone, Nitroanthraquinone

	Pounds.	Dollars.
1920	3,147	2,643
1921	46,327	21,422
1922	93,153	62,445
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	6,625	7,914
1927	6,808	5,705
1928	15,483	12,935

Antimony Oxide, Salts and Compounds

	Pounds.	Dollars
1913	1,819,323	97,447
1914	2,623,084	248,164
1915	1,797,265	219,605
1916	511,848	109,814
1917	192,099	46,190
1918	37,724	13,744
1919	267,885	11,578
1920	569,052	26,274
1921	315,427	18,256
1922	63,296	5,859
1923	3,579,780	245,110

Stated separately after 1923.

Antimony Oxide

	Pounds.	Dollars.
1924	2,236,424	134,072
1925	1,157,274	113,080
1926	3,398,895	433,406
1927	3,260,344	366,640
1928	3,902,078	377,694

Antimony Sulphides, Red and Golden

	Pounds.	Dollars.
1924	147,241	26,872
1925	248,060	29,215
1926	1,027,463	69,452
1927	907,136	62,968
1928	721,457	61,528

Antimony Salts and Compounds, N. E. S.

	Pounds.	Dollars.
1924	953,062	69,134
1925	989,783	83,314
1926	356,947	32,734
1927	80,015	15,135
1928	48,785	7,484

Antipyrin

	Pounds.	Dollars.
1914	7,686	11,608
1915	606	1,085
1916	1,422	2,202
1917	6,429	46,110
1918	22,736	92,653
1919	14,487	160,902
1920	15,656	72,556
1921	3,836	16,194
1922	7,096	10,293
1923	12,688	13,807
1924	12,993	18,129
1925	10,502	11,748
1926	11,327	10,611
1927	44,984	41,393
1928	63,245	55,250

Imports Into the United States

Antitoxins, Vaccines, Serums, Viruses and Bacterins for Therapeutic Purposes

	Ounces.	Dollars.
1913	.....	5,032
1914	.....	19,019
1915	.....	12,826
1916	.....	8,225
1917	.....	11,460
1918	.....	6,009
1919	.....	6,076
1920	.....	6,907
1921	.....	7,314
1922	.....	2,645
1923	.....	5,866
1924	1,232	1,489
1925	9,823	21,016
1926	2,707	2,463
1927	6,848	16,855
1928	677	1,197

Apatite

	Tons.	Dollars.
1901	152	2,004
1913	2,930	22,535
1914	92	796
1915	.....	.....
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	29	825
1920	70	2,648
1921	72	2,286
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Apricot and Peach Kernels

	Pounds.	Dollars.
1913	18,769	3,085
1914	17,800	2,862
1915	67,164	3,398
1916	11,928	2,497
1917	250,075	21,430
1918	231,405	16,932
1919	72,228	12,411
1920	22,177	9,051
1921	73,479	12,733
1922	11,217	1,343
1923	221,462	9,854
1924	706	188
1925	73,001	12,283
1926	60,478	16,651
1927	2,942	724
1928	783	121

Argols or Crude Tartar, or Wine Lees, Crude

	Pounds.	Dollars.
1871	4,024,731	590,453
1881	13,712,528	2,195,420
1891	21,631,507	2,199,263
1901	29,116,816	2,927,281
1913	29,476,172	2,621,491
1914	5,712,667	545,105

Class dropped under 1913 tariff; see below.

Argols or Crude Tartar, or Wine Lees, Crude or Partly Refined (Bitartrate of Potash)

	Pounds.	Dollars.
1914	28,810,048	3,054,618
1915	28,814,957	3,122,326
1916	34,602,184	5,233,516
1917	24,142,073	3,886,864
1918	30,364,538	5,312,836
1919	32,399,982	5,336,969
1920	23,578,221	3,262,315
1921	26,569,756	3,042,334
1922	18,744,192	1,216,700
1923	21,949,727	1,738,874
1924	17,573,525	1,237,653
1925	20,646,972	1,387,637
1926	26,260,293	1,789,044
1927	22,411,194	1,749,692
1928	20,959,643	1,969,784

Arnica, Crude

	Pounds.	Dollars.
1924	65,296	4,266
1925	48,019	3,674
1926	21,616	2,295
1927	23,503	4,106
1928	30,397	15,634

Arrowroot

	Pounds.	Dollars.
1871	592,318	28,889
1881	69,206	8,910
1891	452,960	17,136
1901	64,601	3,908
1913	11,327	688
1914	8,615	316
1915	134	5
1916	5,987	302
1917	30,776	1,613
1918	15,998	2,993
1919	33,752	7,208
1920	1,454,626	73,347
1921	133,361	11,214
1922	1,720	229
1923	7,166	877
1924	13,404	1,842
1925	16,682	4,572
1926	20,698	3,149
1927	24,918	3,522
1928	2,620	778

Arsenic, Metallic

	Pounds.	Dollars.
1924	207,308	40,501
1925	124,817	27,901
1926	201,987	42,060
1927	102,577	20,508
1928	270,160	51,938

Arsenic Sulphide, Realgar, and Orpiment

	Pounds.	Dollars.
1871	1,329,698	29,822
1881	2,225,425	54,056
1891	5,343,229	161,367
1901	5,936,629	278,537
1913	8,475,592	354,284
1914	4,148,928	169,614
1915	3,981,661	178,756
1916	2,794,254	122,795
1917	2,373,701	175,811
1918	7,691,028	654,282
1919	7,038,146	503,535
1920	6,470,700	472,710
1921	8,801,293	794,215
1922	7,520,571	471,206
1923	4,817,824	429,959
1924	474,571	51,300
1925	458,092	50,180
1926	938,908	55,108
1927	485,990	35,610
1928	434,984	38,930

Artists' Colors, in Tubes, Pans, Cakes, Etc.

		Dollars.
1913	.....	136,894
1914	.....	211,303
1915	.....	186,728
1916	.....	129,682
1917	.....	165,958
1918	.....	91,220
1919	.....	85,800
1920	.....	126,026
1921	.....	236,802
1922	.....	187,635
1923	.....	214,539

Subdivided after 1923.

Artists' Colors, N. E. S. Not Assembled in Sets, Kits, Etc.

	Pounds.	Dollars.
1924	134,512	140,596
1925	155,071	154,575
1926	214,166	210,956
1927	326,193	259,176
1928	325,272	260,094

Artists' Colors, N. E. S. Assembled in Sets, Kits, Etc.

	Pounds.	Dollars.
1924	45,291	16,702
1925	52,898	13,166
1926	70,179	18,531
1927	39,991	19,906
1928	63,905	17,807

Ashes, Wood, and Beet Root

	*Tons.	Dollars.
1871	.....	40
1881	.....	8,622
1891	.....	42,624
1901	.....	76,306
1913	.....	36,493
1914	.....	27,884
1915	.....	41,522
1916	.....	43,859
1917	.....	55,226
1918	.....	47,952
1919	7,302.539	49,276
1920	8,537.614	44,175
1921	6,212.848	38,609
1922	5,043.755	23,172
1923	6,481.498	29,818
1924	2,325	34,717
1925	1,804	20,453
1926	1,685	16,141
1927	1,478	14,957
1928	1,412	19,405

* Quantity stated in pounds prior to 1924.

Asphalt and Bitumen

	Tons	Dollars
1871	1,302	14,760
1881	12,883	95,410
1891	78,039	251,137
1901	501,310	204,810
1913	188,725	750,685
1914	45,876	171,981
1915	79,561	465,717
1916	130,039	700,940
1917	161,622	896,989
1918	139,618	851,638
1919	95,214	595,796
1920	91,503	685,998
1921	128,913	1,307,290
1922	8,099	118,953
1923	134,224	1,101,097
1924	116,040	1,087,500
1925	125,456	1,071,850
1926	78,663	583,947
1927	163,844	1,359,459
1928	109,885	898,899

Asphalt, Limestone-Rock

	Tons.	Dollars.
1924	3,563	24,365
1925	4,527	52,903
1926	7,521	79,814
1927	100	1,405
1928	5	95

Atropine and Its Salts, Other Than Coal Tar

	Ounces.	Dollars.
1924	400	840
1925	225	452

Not stated after 1925.

Balm of Gilead

	Pounds.	Dollars.
1919	380	9
1920	50	4
1921	160	90
1922	83	25
1923	406	113
1924	.....	.....
1925	551	98
1926	.....	.....
1927	.....	.....
1928	.....	.....

Balsam Copaiba, Crude

	Pounds.	Dollars.
1871	96,283	34,114
1881	143,258	67,816
1891	171,834	63,253
1901	212,082	57,018
1913	206,447	66,361
1914	245,436	71,339
1915	273,616	59,921
1916	204,464	70,868
1917	308,545	124,122
1918	373,362	202,947
1919	300,659	180,967
1920	426,071	171,398
1921	260,769	69,792
1922	239,922	42,703
1923	223,212	38,408
1924	120,411	18,509
1925	253,002	75,058
1926	161,498	40,585
1927	171,862	46,949
1928	224,086	57,776

Balsam, Fir or Canada, Crude

	Pounds.	Dollars.
1871	.....	3,227
1881	15,510	3,033
1891	34,318	6,858
1901	20,728	5,948
1913	3,691	1,827
1914	13,864	12,505
1915	18,610	14,636
1916	7,113	3,934
1917	4,176	3,897
1918	3,698	1,404
1919	2,344	2,140
1920	2,763	3,570
1921	2,006	3,223
1922	1,455	1,501
1923	3,856	3,899
1924	3,794	4,120
1925	2,267	2,577
1926	4,201	4,638
1927	6,958	7,578
1928	4,156	5,500

Balsam, Peru, Crude

	Pounds.	Dollars.
1871	2,237	3,878
1881	6,561	7,539
1891	10,653	13,104
1901	.....	.....
1913	48,996	61,702
1914	25,021	29,701
1915	27,506	32,735
1916	40,657	112,270
1917	58,933	175,355
1918	44,082	115,086
1919	64,879	163,566
1920	57,752	176,788
1921	50,089	98,422
1922	57,328	69,116
1923	56,414	68,311
1924	55,711	74,841
1925	55,270	74,011
1926	47,870	62,741
1927	54,525	71,896
1928	60,266	78,063

Balsam, Styrax, Crude

	Pounds.	Dollars.
1891	3,432	583
1901	3,325	517
1913	35,861	5,228
1914	5,607	798
1915	11,445	1,550
1916	11,696	5,528
1917	10,892	26,550
1918	14,788	22,616
1919	.....	.....
1920	3,678	3,094
1921	30,445	67,120
1922	7,589	5,139
1923	26,825	10,464
1924	28,182	9,255
1925	44,336	14,050
1926	9,665	2,588
1927	27,792	12,218
1928	54,209	14,290

Balsam, Tolu, Crude

	Pounds.	Dollars
1871	15,275	6,516
1881	39,995	18,791
1891	54,244	12,264
1901	56,785	12,010
1913	57,277	29,552
1914	42,138	19,063
1915	39,750	13,993
1916	63,579	17,233
1917	62,820	18,255
1918	49,869	23,996
1919	58,194	44,606
1920	83,829	90,974
1921	27,871	23,101
1922	44,350	22,615
1923	51,087	24,098
1924	37,561	29,082
1925	46,627	41,393
1926	46,576	41,814
1927	42,994	28,153
1928	38,961	24,583

Balsam, All Other, Crude

	Pounds.	Dollars
1871	.....	3,227
1881	.....	315
1891	36,329	5,024
1901	34,994	29,231
1913	46,000	12,149
1914	33,311	12,410
1915	5,999	4,214
1916	2,503	1,312
1917	12,649	4,235
1918	34,773	48,560
1919	42,817	60,338
1920	17,330	8,354
1921	31,149	31,992
1922	45,271	20,657
1923	84,048	38,739
1924	22,493	17,552
1925	33,699	24,173
1926	47,764	17,475
1927	22,787	10,519
1928	17,729	10,779

Barium Carbonate, Precipitated

	Pounds.	Dollars
1913	2,182,517	20,143
1914	4,995,451	46,425
1915	344,588	7,864
1916	6	2
1917	804	177
1918	106,288	1,437
1919	.....	.....
1920	163,509	18,268
1921	1,816,693	45,859
1922	7,806,346	133,185
1923	8,483,442	185,743
1924	4,930,372	93,973
1925	10,489,859	144,488
1926	20,604,111	204,975
1927	11,161,255	128,309
1928	11,685,910	135,391

Barium Chloride

	Pounds.	Dollars.
1913	2,926,159	26,341
1914	6,110,386	64,563
1915	4,686,029	60,532
1916	50	10
1917	6,614	608
1918	.....	.....
1919	3,290	783
1920	2,520,321	81,988
1921	2,779,966	113,695
1922	4,905,453	81,713
1923	3,907,046	129,362
1924	2,852,789	56,871
1925	4,971,295	95,613
1926	4,374,363	60,179
1927	3,447,493	52,848
1928	2,510,238	28,405

Barium Dioxide (Binoxide)

	Pounds.	Dollars.
1913	3,507,508	215,500
1914	6,085,798	329,139
1915	4,084,144	317,262
1916	546,442	48,451
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	70,862	12,367
1921	684,640	89,138
1922	1,917,370	179,057
1923	2,140,050	188,574
1924	1,777,598	144,164
1925	1,580,154	91,768
1926	484,796	27,497
1927	14,407	1,445
1928	12,242	1,291

Barium Hydroxide

	Pounds.	Dollars.
1924	375,553	9,792
1925	239,368	5,611
1926	225,130	5,162
1927	561,209	13,237
1928	377,799	10,073

Barium Nitrate

	Pounds.	Dollars.
1924	1,184,313	73,780
1925	886,801	39,020
1926	1,450,933	58,780
1927	1,109,858	48,397
1928	1,684,300	74,038

Barks in Crude State, Not Edible

	Pounds.	Dollars.
1901	.....	15,478
1919	400,367	51,274
1920	2,772,957	175,903
1921	4,272,993	242,177
1922	2,627,953	72,092
1923	1,644,663	32,591
1924	266,523	16,020
1925	254,961	27,781
1926	156,334	24,210
1927	113,502	20,139
1928	517,993	52,462

Bark, Cinchona or Other, from Which Quinine May Be Extracted

	Pounds.	Dollars.
1871	1,286,095	697,547
1881	4,219,403	1,846,280
1891	2,672,364	301,085
1901	4,196,419	781,895
1913	3,329,973	854,593
1914	3,654,968	464,411
1915	3,951,196	561,802
1916	3,967,320	777,637
1917	2,531,397	685,986
1918	3,121,958	779,403
1919	3,866,158	803,081
1920	5,242,724	1,132,874
1921	3,566,010	1,334,758
1922	766,589	276,833
1923	3,443,491	1,110,142
1924	2,421,915	691,842
1925	2,538,989	774,252
1926	4,203,292	1,198,580
1927	2,217,951	605,872
1928	1,765,967	486,136

Bark, Hemlock

	*Pounds.	Dollars.
1871	.....	98,207
1881	102,932	492,561
1891	57,255	274,426
1901	16,749	65,313
1913	5,502	31,965
1914	4,483	25,655
1915	3,672	19,967
1916	3,388	17,855
1917	1,118	7,027
1918	270	2,624
1919	969	9,716
1920	2,481	29,454
1921	2,838	32,248
1922	3,205	31,492
1923	5,505	38,166
1924	9,150,882	47,226
1925	5,977,624	33,808
1926	4,561,050	21,043
1927	7,454,431	33,431
1928	4,995,316	20,468

* Quantity stated in tons prior to 1924.

Bark, Mangrove

	*Pounds.	Dollars.
1913	17,578	374,506
1914	7,743	191,472
1915	8,326	222,066
1916	21,107	581,190
1917	10,565	297,897
1918	3,529	72,956
1919	2,817	125,608
1920	2,544	109,085
1921	7,156	344,413
1922	1,668	40,857
1923	8,906	199,724
1924	1,785	36,649
1925	1,867	47,030
1926	12,783,651	213,051
1927	9,186,778	104,080
1928	17,745,920	296,451

*Quantity stated in tons prior to 1926.

Bark, Oak

	Pounds.	Dollars.
1925	560	36
1926	1,250	14
1927	.....	.....
1928	.....	.....

Bark, Wattle

	Pounds.	Dollars.
1924	15,123,490	190,305
1925	12,306,002	199,328
1926	21,687,515	411,474
1927	24,115,673	481,701
1928	14,521,007	381,732

Baryta, Sulphate of, or Barytes, Unmanufactured

	Tons.	Dollars.
1871	693	9,769
1881	.....	.....
1891	2,112	4,852
1901	2,775	6,959
1913	28,358	63,345
1914	32,550	63,270
1915	9,616	21,087
1916	15	245
1917	.....	.....
1918	5	63
1919	35	245
1920	2,058	10,405
1921	23,238	156,987
1922	9,500	64,763
1923	19,500	89,951

See following classes after 1923.

Baryta, Sulphate of, or Barytes, Manufactured

	Tons.	Dollars
1891	1,812	19,196
1901	1,802	19,795
1913	4,594	36,819
1914	5,379	42,627
1915	1,755	14,997
1916	.....	2
1917	210	3,813
1918	.....	.....
1919	.....	.....
1920	107	683
1921	909	10,519
1922	1,879	24,440
1923	5,841	90,450

See following classes after 1923.

Barytes, Crude

	Tons.	Dollars.
1924	18,752	116,534
1925	22,479	119,879
1926	27,978	168,020
1927	60,535	277,729
1928	53,867	195,806

Barytes, Ground or Manufactured

	Tons.	Dollars.
1924	4,235	65,388
1925	2,602	38,551
1926	2,667	38,920
1927	3,179	45,730
1928	2,763	32,478

Imports Into the United States

Bauxite, Crude

	Tons.	Dollars.
1901	10,703	63,597
1913	30,863	119,848
1914	23,576	86,871
1915	12,870	50,357
1916	3,450	17,194
1917	6,403	22,508
1918	2,238	10,045
1919	2,744	10,577
1920	11,748	77,398
1921	59,135	343,909
1922	11,644	52,468
1923	**59,192**	**276,719**
1924	173,327	833,628
1925	296,153	1,415,104
1926	**316,065**	**1,311,710**
1927	300,212	1,332,289
1928	341,572	1,546,686

Bay Leaves, Unground

	Pounds.	Dollars.
1924	55	28
1925	.....	.....
1926	**2,181**	**72**
1927	.....	.....
1928	.....	.....

Bay Rum or Bay Water (Product of Virgin Islands)

	Pounds.	Dollars.
1928	279,953	24,226

Bay Rum or Bay Water (Other Countries)

	*Pounds.	Dollars.
1913	**685**	**707**
1914	483	620
1915	503	673
1916	335	341
1917	249	278
1918	641	796
1919	1,384	2,716
1920	14,532	13,666
1921	5,700	5,829
1922	12,336	49,718
1923	**98,077**	**16,038**
1924	193,960	26,659
1925	287,429	35,965
1926	**452,909**	**59,996**
1927	187,951	19,977
1928	903	163

* Quantity stated in proof-gallons prior to 1924.

Includes "Product of Virgin Islands" prior to 1928.

Beeswax, White, Bleached

	Pounds.	Dollars.
1926	**361,362**	**155,947**
1927	281,152	124,362
1928	229,131	96,689

Beeswax and Other Animal Wax

	Pounds.	Dollars.
1871	16,309	**3,902**
1881	7,003	1,415
1891	383,725	81,920
1901	217,641	57,219
1913	828,287	254,704
1914	1,412,695	477,745
1915	1,565,338	440,047
1916	2,284,283	618,856
1917	2,711,514	904,557
1918	1,950,513	678,148
1919	2,100,458	783,716
1920	3,919,810	1,854,782
1921	2,215,332	693,551
1922	3,100,971	580,723
1923	**4,072,168**	**817,746**
1924	3,271,319	702,723
1925	**2,956,990**	875,743
1926	**4,428,482**	**1,489,786**
1927	4,475,642	1,501,316
1928	4,902,623	1,572,734

Beet Pulp, Dried

	*Tons.	Dollars.
1920	26,531,967	537,965
1921	70,728,443	1,168,627
1922	10,878,161	79,934
1928	**33,112,240**	**547,171**
1924	27,422	791,678
1925	**39,201**	**1,158,602**
1926	**38,023**	**1,214,542**
1927	28,059	811,884
1928	15,628	469,117

* Quantity stated in pounds prior to 1924.

Belladonna

	Pounds.	Dollars.
1924	143,130	19,400
1925	229,549	29,766
1926	**244,117**	**28,746**
1927	196,664	21,884
1928	335,646	37,456

Benzaldehyde, Not Medicinal, Nitrobenzaldehyde

	Pounds.	Dollars.
1925	2,204	1,212
1926	1,141	745
1927	3,769	4,089
1928	2,126	1,376

Benzanthrone, Benzidin Sulphate, Etc.

	Pounds.	Dollars.
1924	7	23
1925	.....	.....
1926	**5,269**	**3,585**
1927	313,197	191,764
1928	215,356	132,736

Benzene

	Pounds.	Dollars.
1924	74,100	2,363
1925	585,427	17,534
1926	**8,127,608**	**219,711**
1927	3,240,132	69,914
1928	3,874,682	85,708

Benzol

	Pounds.	Dollars.
1917	3,175,906	273,108
1918	3,073,948	216,640
1919	1,509,861	88,209
1920	170,519	2,547
1921	1,717,936	42,537
1922	458,949	9,351

Not stated after 1922.

Benzyl Chloride

	Pounds.	Dollars.
1920	**1,150**	**452**
1921	.....	.....
1922	.....	.....
1923	**39**	**32**
1924	.....	.....
1925	.....	.....

Not stated after 1925.

Betanaphthol, and Benzaldehyde, Medicinal

	Pounds.	Dollars.
1919	955	716
1920	32,996	23,002
1921	2	4
1922	1,056	465
1923	2,770	4,022
1924	801	1,202
1925	**2,806**	**3,036**
1926	1,736	2,672
1927	870	1,103
1928	11	127

Betel or Areca Nuts

	Pounds.	Dollars.
1925	37,152	2,471
1926	**102,141**	**7,031**
1927	160,103	14,292
1928	108,128	4,973

Bismuth

	Pounds.	Dollars.
1871	.....	**47,047**
1881	.....	**33,209**
1891	116,174	**210,747**
1901	156,782	**251,284**
1913	151,030	257,176
1914	133,190	**241,448**
1915	34,237	72,587
1916	64,281	155,925
1917	88,465	196,113
1918	75,611	**207,098**
1919	76,539	218,376
1920	75,781	97,489
1921	96,692	159,670
1922	97,470	158,760
1923	**108,475**	**236,207**
1924	33,398	75,404
1925	59,051	89,203
1926	72,741	185,350
1927	65,715	153,640
1928	44,433	82,098

Bismuth, Salts and Compounds

	Pounds.	Dollars.
1924	10,652	14,518
1925	692	1,522
1926	14,188	**17,275**
1927	11,441	16,467
1928	9,716	14,373

Blanc Fixe or Precipitated Barium Sulphate

	Pounds.	Dollars.
1871	147,464	5,910
1881	11,330	2,027
1891	173,772	3,207
1901	2,328,525	28,481
1913	4,808,726	58,499
1914	4,732,474	60,641
1915	2,233,369	25,748
1916	492,723	11,523
1917	408,163	10,029
1915	179,200	2,376
1919	1,285	90
1920	41,608	1,267
1921	1,090,364	19,291
1922	3,651,152	**55,643**
1928	**2,037,133**	**47,352**
1924	1,184,694	29,665
1925	4,187,237	91,149
1926	**2,928,192**	**61,129**
1927	6,031,772	137,883
1928	6,031,191	134,719

Blanco Polish

	Pounds.	Dollars.
1913	.....	21,854
1914	.....	17,997
1915	.....	17,743
1916	.....	21,229
1917	.....	53,458
1918	.....	24,827
1919	.....	18,953
1920	.....	36,387
1921	.....	17,999
1922	.....	17,785
1923	.....	15,850
1924	84,447	11,768
1925	79,263	12,339
1926	**78,521**	**13,475**
1927	10,832	1,821
1928	47,210	7,452

Bleacher's Blue

	Dollars.
1913	4,143
1914	14,922
1915	14,125
1916	14,922
1917	19,048
1918	5,166
1919	5,107
1920	2,433
1921	2,491
1922	5,069

Not stated after 1922.

Blessed Thistle

	Pounds.	Dollars.
1924	42,696	1,854
1925	108,769	5,520
1926	**63,158**	**3,062**
1927	189,162	12,198
1928	56,072	2,670

Bloodchar

	Pounds.	Dollars.
1913	2,954	333
1914	26,674	1,789
1915	14,167	1,196
1916	15	16
1917	.....	.....
1918	.....	.....
1919	10,732	441
1920	.....	.....
1921	**101,787**	**1,735**
1922	69	2

Included in "Bone Char," etc., after 1922.

Blood, Dried

	*Tons.	Dollars.
1871	.....	**676**
1881	.....	.....
1891	.....	**1,594**
1901	.....	138
1914	.....	391,947
1915	.....	227,648
1916	.....	196,600
1917	.....	379,067
1918	.....	479,518
1919	14,281,776	518,630
1920	18,457,336	678,948
1921	7,412,909	290,609
1922	15,085,485	337,349
1923	**22,266,402**	**800,993**
1924	9,300	581,12.
1925	7,902	414,553
1926	**11,862**	**658,204**
1927	12,721	753,586
1928	9,689	627,972

* Quantity stated in pounds prior to 1924.

Blues, Such as Berlin, Prussian, Chinese, Etc.

	Pounds.	Dollars.
1871	19,185	7,133
1881	47,031	8,859
1891	181,451	48,074
1901	154,753	40,234
1914	275,174	50,149
1915	547,299	112,904
1916	185,294	110,901
1917	373,074	209,524
1918	13,867	15,009
1919	8,222	5,879
1920	297,256	120,729
1921	275,757	124,204
1922	20,617	7,113
1923	18,190	7,871
1924	23,156	5,786
1925	16,182	5,071
1926	8,998	2,832
1927	14,202	4,654
1928	18,581	5,202

Bones, Crude, Steamed or Ground

	Pounds.	Dollars.
1871	.....	27,183
1881	.....	312,697
1891	.....	332,911
1901	.....	**353,184**
1913	.....	**565,366**
1914	.....	829,730
1915	.....	756,015
1916	.....	755,700
1917	.....	826,142
1918	.....	**1,010,871**
1919	**26,275,886**	369,583
1920	**94,593,269**	**1,500,142**
1921	**155,409,170**	**2,526,323**
1922	**41,202,190**	450,649
1923	**96,895,736**	**1,149,822**
1924	88,394,848	1,131,563
1925	119,579,636	1,282,848
1926	106,784,362	1,153,785
1927	112,530,337	1,298,792
1928	127,504,214	1,689,858

Bone Black, Lamp Black, Etc.

	Pounds.	Dollars.
1891	.....	32,926
1901	.....	47,946
1913	.....	31,056
1914	.....	27,604
1915	.....	24,459
1916	.....	2,396
1917	.....	6,388
1918	.....	279
1919	**69,977**	5,118
1920	**315,272**	26,663
1921	**439,126**	28,757
1922	518,809	25,717
1923	**1,787,243**	119,068

Stated separately after 1923.

Bone Black, Dry or Ground in Oil

	Pounds.	Dollars.
1924	1,563,260	84,641
1925	146,641	10,080

Not stated after 1925.

Bone Black, Bone Char, Blood Char, Decolorizing, Etc., Not Suitable for Use as Pigment

	Pounds.	Dollars.
1901	.....	2,082
1913	.....	12,484
1914	.....	17,717
1915	.....	120,715
1916	.....	86,724
1917	.....	80,163
1918	.....	11,865
1919	.....	69,813
1920	.....	312,330
1921	.....	433,712
1922	.....	80,812
1923	.....	**85,807**
1924	186,291	18,396
1925	1,516,471	50,931
1926	**2,204,646**	**65,791**
1927	1,789,780	87,141
1928	1,656,378	94,264

Bone Dust, Bone Phosphates, or Animal Carbon and Ash, Fit Only for Fertilizer

	Tons.	Dollars.
1881	.....	19,666
1891	6,614	122,717
1901	2,185	38,097
1913	33,919	818,307
1914	41,446	1,038,493
1915	23,440	584,748
1916	20,595	527,079
1917	14,805	383,541
1918	8,428	285,882
1919	3,970	92,588
1920	6,567	248,176
1921	27,413	1,417,886
1922	18,234	495,445
1923	**41,994**	**1,215,547**
1924	47,424	1,537,436
1925	16,594	460,092
1926	**40,439**	**1,169,895**
1927	50,071	1,475,250
1928	70,587	2,036,620

Borate of Lime or Soda, and Other Borate Material, Crude

	Pounds.	Dollars.
1922	**3,360,000**	**67,500**
1923	**10,317,008**	**226,584**
1924	10,120,816	149,984
1925	5,284,243	86,367
1926	**6,932,164**	**97,324**

Included in "Borax, Crude," after 1926.

Borax, Crude

	*Tons.	Dollars.
1871	5	1
1881	.....	.....
1891	82,642	9,050
1901	501,137	18,291
1913	11,768	882
1914	686	93
1915	.....	.....
1916	.....	.....
1917	83	3
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	6,854,490	107,788
1923	**1,916,000**	**44,458**
1924	2,240,100	22,724
1925	4,480,000	64,496
1926	2,240,023	32,145
1927	13,440,000	187,679
1928	6,000	213,635

* Quantity stated in "Pounds" prior to 1928.

Borax, Refined

	Pounds.	Dollars.
1871	134,927	20,705
1881	4,136	866
1891	10,725	1,062
1901	.....	.....
1914	4,522	641
1915	2,265	314
1916	682	112
1917	614	109
1918	2	1
1919	478	106
1920	80,334	2,423
1921	226,469	12,505
1922	767	255
1923	**62**	**15**
1924	169,516	7,005
1925	1,323	248
1926	**1,120**	**175**
1927	20,014	1,627
1928	208,659	4,586

Bort

	Carats.	Dollars.
1871	.....	17
1881	.....	51,409
1891	.....	142,818
1901	.....	**783,926**
1913	.....	94,043
1914	.....	86,717
1915	.....	71,548
1916	.....	**54,974**
1917	.....	156,983
1918	.....	**297,989**
1919	.....	**676,065**
1920	.....	**3,591,776**
1921	.....	**1,087,852**
1922	.....	1,047,894
1923	.....	**813,633**
1924	.....	93,813
1925	**33,991**	230,486
1926	**90,773**	**707,111**
1927	3,576	53,857
1928	1,287	26,286

Bottle Caps, Collapsible Tubes and Sprinkler Tops, Not Decorated, Etc.

	Gross.	Dollars.
1913	.....	24,123
1914	.....	50,425
1915	.....	28,420
1916	.....	15,106
1917	.....	13,899
1918	.....	9,607
1919	.....	27
1920	.....	741
1921	.....	1,799
1922	.....	6,255
1923	.....	**5,916**
1924	.....	10,703
1925	.....	9,649
1926	.....	**34,995**
1927	120,275	41,764
1928	61,579	35,476

Bottle Caps, Collapsible Tubes and Sprinkler Tops, Decorated, Etc.

	Gross.	Dollars.
1913	.....	203,357
1914	.....	547,034
1915	.....	214,522
1916	.....	178,087
1917	.....	196,564
1918	.....	55,532
1919	.....	11,118
1920	.....	73,551
1921	.....	46,733
1922	.....	94,154
1923	.....	**69,566**
1924	.....	70,579
1925	.....	110,064
1926	.....	**25,750**
1927	248,103	115,097
1928	274,123	175,771

Brazil Wood

	Pounds.	Dollars.
1924	1,602,992	10,188
1925	1,301,898	16,123
1926	**1,944,940**	**21,500**
1927	31,000	166
1928	256,368	3,513

Bristles

	Pounds.	Dollars.
1871	581,429	721,518
1881	891,877	955,118
1891	1,522,115	**1,582,827**
1901	50,449	21,983

Stated separately for later years.

Bristles, Crude, Not Sorted, Bunched or Prepared

	Pounds.	Dollars.
1913	18,913	**13,306**
1914	27,036	25,280
1915	45,467	3,336
1916	92,300	15,239
1917	128,894	52,431
1918	33,483	**44,145**
1919	45,754	64,062
1920	100,737	**148,938**
1921	86,203	275,747
1922	5,816	11,032
1923	**60,740**	**20,676**
1924	6,188	17,124
1925	4,877	12,661
1926	**67,998**	**24,789**
1927	3,404	6,615
1928	1,973	1,793

Bristles, Sorted, Bunched, or Prepared

	Pounds.	Dollars.
1913	3,479,666	3,319,904
1914	3,551,081	3,255,554
1915	3,726,625	3,348,533
1916	3,514,309	3,456,452
1917	4,456,284	4,678,801
1918	3,873,252	4,643,042
1919	3,358,111	4,599,516
1920	4,109,222	8,203,803
1921	4,008,241	8,534,333
1922	3,238,475	4,629,841
1923	**5,407,504**	**7,670,472**
1924	5,544,507	9,217,581
1925	3,858,985	7,766,451
1926	**4,690,875**	**7,508,691**
1927	5,468,746	7,462,721
1928	3,411,113	4,781,330

Bromine

	Pounds.	Dollars.
1922	300	84
1923	**1,462**	**670**
1924	404	840
1925	41,820	9,714
1926	**5,829**	**2,215**
1927	35,517	13,625
1928	.....	.....

Bromine Compounds N. E. S.

	Pounds.	Dollars.
1924	17,075	3,099
1925	148,508	55,176
1926	76,077	20,168
1927	551,466	170,561
1928	186,872	50,700

Bronze, or Dutch Metal, in Leaf

	*Leaves (5½x5½ inches)	Dollars.
1871	.....	15,492
1881	.....	45,307
1891	.....	**183,249**
1901	983,371	87,864
1913	763,071	**104,329**
1914	792,578	**110,318**
1915	806,038	**110,163**
1916	291,396	**38,556**
1917	306,497	**81,277**
1918	473,835	**136,894**
1919	158,516	38,114
1920	246,944	**71,595**
1921	219,857	**58,447**
1922	158,028	**32,586**
1923	**445,437**	**86,223**
1924	501,614	87,187
1925	42,349,984	**60,938**
1926	**45,879,591**	**90,804**
1927	39,465,594	73,443
1928	40,293,413	66,468

* Quantity stated in 100 leaves prior to 1925.

Imports Into the United States

Bronze Powder, Brocades, Flitters and Metallics

	Pounds.	Dollars.
1891	130,367	19,555
1901	1,960,025	611,467
1913	1,405,502	420,306
1914	1,403,091	408,240
1915	1,063,206	286,654
1916	161,400	96,852
1917	524,032	288,976
1918	61,785	34,153
1919	11,099	5,093
1920	138,253	82,294
1921	745,041	288,435
1922	1,167,005	293,968
1923	965,056	287,363
1924	80,082	53,904

Stated separately after 1924.

Bronze Brocades, Flitters and Metallics

	Pounds.	Dollars.
1925	78,862	58,487
1926	84,724	48,266
1927	266,156	117,859
1928	350,050	139,674

Bronze Powder

	Pounds.	Dollars.
1925	744,372	275,235
1926	936,230	364,539
1927	1,008,408	371,489
1928	4,039,398	388,497

Brown, Spanish, Indian Red and Colcothar, or Oxide of Iron

	Pounds.	Dollars.
1871	.....	40,663
1881	.....	30,195
1891	.....	25,790
1901	.....	66,251
1913	.....	103,604
1914	.....	186,476
1915	.....	183,033
1916	.....	221,209
1917	.....	292,122
1918	.....	233,516
1919	9,791,019	280,076
1920	11,277,278	362,288
1921	16,656,187	528,306
1922	17,936,324	589,329
1923	20,273,852	724,244

Not stated after 1923.

Brown, Vandyke, Cassel Earth or Cassel Brown

	Pounds.	Dollars.
1881	.....	6,451
1891	.....	106
1901	.....	.....
1913	.....	1,381
1914	.....	2,663
1915	.....	1,497
1916	.....	365
1917	.....	2,534
1918	.....	854
1919	33,600	2,573
1920	373,456	21,181
1921	417,875	13,314
1922	327,400	7,514
1923	478,281	12,882
1924	418,605	7,877
1925	486,407	9,364
1926	988,962	17,424
1927	1,508,459	22,735
1928	1,113,270	19,864

Brushes, Feather Dusters and Hair Pencils

		Dollars.
1871	.....	222,188
1881	.....	439,858
1891	.....	858,821
1901	.....	1,134,396
1913	.....	2,074,141
*1914	.....	563,160

*Figures cover period from July 1 to October 3, 1913.

Stated separately after October 3, 1913.

Brushes

		Dollars.
1914	.....	1,605,964
1915	.....	1,667,289
1916	.....	1,309,423
1917	.....	2,188,054
1918	.....	2,979,414

Stated separately after 1918.

Brushes, Hair Pencils

	*Dozen.	Dollars.
1919	401,262	5,349
1920	934,468	9,603
1921	2,072,143	33,349
1922	3,046,264	22,495
1923	2,308,314	24,684
1924	3,582,527	35,671
1925	3,267,644	46,273
1926	6,796,223	61,004
1927	1,327,970	123,856
1928	2,254,591	210,022

*Quantity stated as "Number" prior to 1927.

Brushes, Paint

	*Dozen.	Dollars.
1924	4,509,511	86,238
1925	3,305,138	65,739
1926	3,785,980	63,585
1927	631,160	270,701
1928	720,568	211,283

*Quantity stated as "Number" prior to 1927.

Brushes, Toilet, Comprising Tooth, Hair, Nail or Hand

	Number.	Dollars
1919	43,835,308	2,208,099
1920	41,980,380	3,004,436
1921	34,442,124	3,102,492
1922	28,379,384	1,774,798
1923	43,822,871	2,306,445
1924	27,582,785	1,325,278
1925	16,534,799	815,395

Subdivided after 1925.

Brushes, N. E. S.

	*Dozen.	Dollars.
1919	7,899,454	205,827
1920	7,064,346	196,768
1921	12,747,257	586,508
1922	9,617,492	368,599
1923	17,916,236	785,502
1924	23,634,835	663,277
1925	18,564,750	623,279
1926	18,953,673	700,867
1927	960,516	563,695
1928	702,598	187,427

*Quantity stated as "Number" prior to 1927.

Buchu Leaves

	Pounds.	Dollars.
1871	71,524	7,530
1881	93,850	14,012
1891	.....	1,314
1901	.....	22,238
1913	105,310	114,632
1914	125,368	130,352
1915	120,704	115,689
1916	94,520	85,452
1917	100,809	85,807
1918	50,685	42,434
1919	85,303	89,578
1920	86,535	138,843
1921	93,757	182,722
1922	67,506	44,974
1923	135,298	96,532
1924	128,192	81,019
1925	112,337	47,746
1926	83,180	28,446
1927	130,978	32,444
1928	97,832	23,465

Buckthorn

	Pounds.	Dollars.
1924	313,955	13,981
1925	84,859	4,417
1926	303,534	13,391
1927	282,413	9,791
1928	299,494	8,567

Burdock

	Pounds.	Dollars.
1924	44,277	4,768
1925	37,449	3,456
1926	50,424	2,912
1927	33,509	2,445
1928	51,705	3,827

Butyraldehyde

	Pounds.	Dollars.
1926	10,586	2,632
1927	55,114	11,005
1928	68,037	14,688

Cadmium

	Pounds.	Dollars.
1881	.....	1,131
1891	.....	678
1901	.....	5,715
1913	1,000	1,508
1914	1,543	1,239
1915	264	278
1916	5	6
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	101	216
1922	.....	.....
1923	2,256	2,553
1924	1,102	743
1925	5	6
1926	.....	.....
1927	.....	.....
1928	74,748	39,554

Caffeine

	Pounds.	Dollars.
	15,543	45,446
1913	59,773	211,361
1914	80,350	260,323
1915	54,323	186,557
1916	1,267	15,228
1917	1,601	17,219
1918	6,471	64,529
1919	2,662	26,383
1920	2,992	14,884
1921	2,574	12,769
1922	8,519	34,655
1923	5,890	11,361
1924	100	234
1925	752	1,680
1926	.....	.....
1927	1,500	2,713
1928	3,654	5,312

Caffeine Salts and Derivatives, Except Coal Tar

	Pounds.	Dollars.
1914	.....	9,712
1915	.....	4,071
1916	.....	605
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	44	44
1922	.....	1,195
1923	.....	951
1924	150	209
1925	61	117
1926	300	710
1927	.....	.....
1928	228	227

Calamus

	Pounds.	Dollars.
1924	17,653	990
1925	14,292	1,209
1926	13,939	608
1927	25,829	1,421
1928	3,411	515

Calcium

	Pounds.	Dollars.
1920	21,648	3,937
1921	2,269	2,692
1922	3,684	682
1923	41	141
1924	4,301	2,132
1925	1,325	724
1926	.....	.....
1927	.....	.....
1928	.....	.....

Calcium Acetate, Chloride, Carbide and Nitrate

	Pounds.	Dollars.
1871	.....	89,660
1881	.....	.....
1891	.....	.....
1901	.....	.....
1914	.....	53,455
1915	.....	1,208,394
1916	.....	3,206,369
1917	.....	3,808,281
1918	.....	3,422,190
1919	74,915,529	2,920,293
1920	76,847,476	2,911,179
1921	111,261,888	4,466,039
1922	47,667,755	1,775,973
1923	41,360,410	1,481,787

Stated separately after 1923.

Calcium Acetate, Crude (Brown and Gray)

	Pounds.	Dollars.
1924	1,285,427	37,372
1925	4,889,747	120,794
1926	3,217,053	78,854
1927	6,415,268	206,513
1928	7,404,325	256,615

Calcium Arsenate

	Pounds.	Dollars.
1925	84	30
1926	2,037	855
1927	3,817	721
1928	.....	.....

Calcium Carbide

	Pounds.	Dollars.
1924	10,271,143	352,37[illegible]
1925	16,630,147	628,672
1926	17,553,503	682,072
1927	16,289,425	645,012
1928	1,519,801	53,066

Calcium Chloride

	Pounds.	Dollars.
1924	8,018,017	54,219
1925	5,970,844	47,258
1926	9,555,280	68,854
1927	15,088,415	97,510
1928	14,912,647	84,950

Calcium Cyanamid or Lime Nitrogen

	Tons.	Dollars.
1913	14,656	777,774
1914	29,536	1,590,004
1915	20,564	919,574
1916	38,023	1,633,366
1917	44,146	1,951,104
1918	43,070	2,297,478
1919	46,149	2,705,475
1920	84,678	5,534,716
1921	34,702	2,443,450
1922	21,643	1,111,375
1923	57,678	3,086,271
1924	67,715	3,611,887
1925	90,761	4,252,918
1926	102,052	5,055,086
1927	92,153	3,977,590
1928	125,907	4,597,957

Calcium Nitrate (Nitrate of Lime)

	Tons.	Dollars.
1924	9,496	379,580
1925	7,555	346,285
1926	11,655	500,286
1927	16,999	774,912
1928	23,373	999,947

Calcium Tartrate, Crude

	Pounds.	Dollars.
1914	118,256	8,849
1915	1,755,954	161,566
1916	1,101,255	135,638
1917	371,910	51,418
1918	118,355	19,715
1919	.....	.....
1920	212,519	27,235
1921	54,851	809
1922	218,000	12,080
1923	1,081,827	80,065
1924	356,983	1,454
1925	622,106	20,792
1926	541,035	36,236
1927	199,645	15,544
1928	3,735,512	311,717

Calomel, Corrosive Sublimate and Other Mercurial Medicinal Preparations

		Dollars
1871	.....	3,147
1881	.....	5,640
1891	.....	5,244
1901	.....	15,931
1913	.....	42,728
1914	.....	37,589
1915	.....	25,694
1916	.....	13,158
1917	.....	9,974
1918	.....	2,124
1919	.....	915

Stated separately after 1919.

Calomel

	Pounds.	Dollars.
1920	3,026	3,254
1921	720	1,029
1922	2,581	1,876
1923	2,947	3,259
1924	3,386	3,018
1925	4,796	4,093
1926	7,659	7,727
1927	5,526	6,458
1928	6,365	8,963

Capsicum, or Red Pepper, Ground or Unground

	Pounds.	Dollars.
1913	4,022,755	412,823
*1914	984,716	130,076

*Figures are for July 1 to October 3, 1913. Stated separately after October 3, 1913. See under Pepper.

Camomile Flowers

	Pounds.	Dollars
1881	.....	11,761
1891	.....	9,463
1901	.....	34,035
1913	.....	14,176
1914	.....	6,252
1915	.....	13,115
1916	.....	27,810
1917	.....	64,432
1918	.....	41,886
1919	72,404	14,394
1920	336,397	91,515
1921	167,700	36,893
1922	38,124	7,653
1923	383,828	67,240
1924	242,372	24,104
1925	56,582	5,458
1926	124,125	11,566
1927	199,261	29,891
1928	211,679	27,004

Camwood

	Tons.	Dollars.
1881	308	27,513
1891	3	220
1901	.....	.....
1913	½	191
1914	.....	.....
1915	1	209
1916	80	5,991
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	1	131
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Candle Pitch or Tar, and Palm or Other Vegetable Stearin

	Pounds.	Dollars
1891	.....	13,411
1901	.....	4,837
1913	3,047,020	56,970
1914	2,203,222	40,004
1915	1,262,725	23,400
1916	853,140	21,596
1917	467,958	14,446
1918	103,349	7,063
1919	.....	.....
1920	160,050	40,795
1921	5,000	767
1922	40,826	2,025
1923	250,290	5,670

Included in "Oil, Stearin, Palm, etc.," after 1923.

Candles and Tapers, Wax and Other

	Pounds.	Dollars.
1871	16,018	5,894
1881	10,999	3,237
1891	19,842	3,968
1901	26,272	5,651
1913	.....	22,990
1914	.....	14,346
1915	.....	8,638
1916	.....	9,118
1917	.....	4,515
1918	.....	3,916
1919	28,348	6,708
1920	28,459	8,365
1921	34,991	9,369
1922	76,715	13,726
1923	74,096	14,816
1924	262,129	66,963
1925	552,682	169,593

Subdivided after 1925.

Candles, Wax

	Pounds.	Dollars.
1926	413,961	149,446
1927	436,126	191,313
1928	1,112,993	235,943

Candles, All Other

	Pounds.	Dollars.
1926	24,375	8,073
1927	34,8339	9,142
1928	39,168	8,684

Cannabis

	Pounds.	Dollars.
1924	200	443
1925	292	1,292
1926	299	1,664
1927	200	1,020
1928	372	2,705

Cantharis and Other Blistering Beetles

	Pounds.	Dollars.
1871	20,803	20,539
1881	16,008	11,087
1891	5,787	4,256
1901	22,800	9,435
1914	5,648	4,435
1915	14,047	12,266
1916	32,603	26,923
1917	25,625	47,857
1918	5,949	6,677
1919	5,289	10,270
1920	10,159	12,269
1921	4,573	5,196
1922	2,953	3,026
1923	17,400	11,678
1924	667	1,056
1925	3,680	2,500
1926	422	885
1927	.....	.....
1928	2,459	625

Carbazole, Purity of 65% or More

	Pounds.	Dollars.
1920	250	108
1921	.....	.....
1922	8,820	3,865
1923	.....	.....
1924	.....	.....
1925	2,073	828
1926	2,157	324
1927	.....	.....
1928	.....	.....

Carbon Tetrachloride

	Pounds.	Dollars.
1914	572,910	28,300
1915	342,854	18,139
1916	.....	.....
1917	2	2
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	144,472	3,956
1923	22,039	603
1924	1,429	130
1925	.....	.....
1926	107	43
1927	.....	.....
1928	.....	.....

Cassava

	Pounds.	Dollars.
1925	169,807	3,089
1926	65,979	1,585
1927	48,759	1,919
1928	11,958,874	111,648

Casein or Lactarene

	Pounds.	Dollars.
1913	8,803,639	651,062
1914	10,799,351	705,305
1915	7,919,742	498,897
1916	10,376,641	984,899
1917	12,319,111	1,843,492
1918	12,106,855	1,765,653
1919	8,125,135	959,995
1920	24,039,313	2,783,548
1921	14,179,764	1,570,069
1922	10,529,295	706,861
1923	25,641,741	4,556,246
1924	16,404,299	1,840,057
1925	18,897,139	1,442,204
1926	24,258,397	2,384,058
1927	26,530,425	3,274,394
1928	24,177,199	3,283,870

Casein Compounds, Galalith, Etc.

	Pounds.	Dollars.
1913	.....	12,736
1914	.....	15,060
1915	.....	10,048
1916	.....	10,028
1917	.....	30,762
1918	.....	45,368
1919	.....	75,883
1920	.....	138,515
1921	.....	58,016
1922	.....	147,448
1923	.....	261,960
1924	333,465	360,589
1925	204,347	231,084
1926	137,817	189,460
1927	119,183	224,824

Stated separately after 1927.

Casein Compounds, Galalith, Etc., Crude

	Pounds.	Dollars.
1928	3,268	3,552

Imports Into the United States

Casein Compounds, Galalith, Etc., Manufactured

	Pounds.	Dollars.
1928	72,715	177,823

Casein Glue, Isinglass and Other Fish Sounds, Prepared

	Pounds.	Dollars.
1924	18,743	23,187
1925	37,268	30,463
1926	20,680	27,394
1927	37,899	33,084
1928	47,532	39,648

Cassia Buds, Unground.

	Pounds.	Dollars.
1871	22,003	6,554
1881	64,199	9,897
1891	129,317	13,914
1901	6,545	1,366
1914	173,449	10,101
1915	193,332	10,394
1916	197,056	16,585
1917	218,563	14,131
1918	173,202	16,271
1919	284,140	52,853
1920	211,688	23,399
1921	152,185	17,429
1922	793,701	45,098
1925	549,649	33,072
1926	839,745	60,167
1927	308,191	27,866
1928	228,182	15,343

Not stated during 1923 and 1924.

Cassia, Cassia Buds and Cassia Vera, Ground

	Pounds.	Dollars.
1871	2,460	387
1881	.....	.....
1891	.....	.....
1901	.....	.....
1917	139,224	21,672
1918	5,400	844
1919	200	20
1920	.....	.....
1921	24,800	7,753
1922	.....	.....
1923	24,912	1,125
1924	9	3
1925	10	3
1926	22,677	2,294
1927	11,199	1,456
1928	106,009	5,634

Cassia, and Cassia Vera, Unground

	Pounds.	Dollars.
1871	1,632,646	291,972
1881	1,987,052	207,106
1891	5,611,621	137,591
1901	3,364,336	297,478
1914	5,216,426	358,216
1915	5,658,154	348,598
1916	7,487,156	493,161
1917	9,019,350	803,079
1918	5,817,554	429,341
1919	6,581,061	546,194
1920	8,102,110	858,067
1921	5,850,438	622,260
1922	9,981,916	587,018
1923	9,671,137	716,539
1924	3,549,805	211,277
1925	5,929,669	382,994
1926	10,057,363	686,961
1927	7,786,664	602,779
1928	7,116,452	559,955

Castoreum

	Ounces.	Dollars.
1871	.....	5
1881	.....	62
1891	5,247	1,343
1901	527	232
1914	6,338	3,468
1915	13,035	5,344
1916	19,657	6,694
1917	24,427	8,250
1918	28,578	7,961
1919	21,067	6,941
1920	31,534	10,378
1921	8,288	2,385
1922	22,985	4,657
1923	2,807	545
1924	8,634	1,544
1925	1,958	527
1926	1,724	1,128
1927	4,716	1,880
1928	1,587	1,703

Castor Beans

	*Pounds.	Dollars.
1871	36,853	44,393
1881	36,540	34,770
1891	103,374	120,202
1901	191,288	255,594
1914	1,043,928	1,154,085
1915	924,605	993,580
1916	1,071,969	1,555,495
1917	767,075	1,185,775
1918	1,262,488	2,842,206
1919	627,835	2,188,256
1920	1,404,550	3,633,698
1921	663,031	1,343,521
1922	1,554,016	2,046,377
1923	1,504,941	2,876,228
1924	81,543,416	3,221,267
1925	90,747,113	4,320,744
1926	106,763,274	4,169,573
1927	119,111,564	4,104,269
1928	113,728,658	3,915,565

*Figures stated in bushels prior to 1924.

Catgut, Whipgut or Wormgut, Unmanufactured

	Pounds.	Dollars.
1891	.....	246,450
1901	.....	1,834
1914	.....	123,551
1915	.....	198,081
1916	.....	253,678
1917	.....	316,491
1918	.....	216,810
1919	24,813	328,796
1920	23,197	172,662
1921	47,440	324,058
1922	46,988	274,199
1923	56,856	297,720

Stated separately after 1923.

Catgut For Surgical Use

	Pounds.	Dollars.
1924	35,400	155,444
1925	21,180	84,894
1926	7,109	31,478
1927	831	6,677
1928	604	5,306

Catgut, Whipgut and Wormgut, Manufactures of

	Pounds.	Dollars.
1881	.....	194,132
1891	.....	13,451
1901	.....	77,532
1914	.....	62,466
1915	.....	68,492
1916	.....	9,790
1917	.....	4,867
1918	.....	8,602
1919	.....	14,446
1920	.....	8,001
1921	.....	21,170
1921	.....	6,850
1923	.....	42,394
1924	6,302	64,412
1925	3,971	33,147
1926	28,091	129,891
1927	32,488	152,517
1928	41,593	163,225

Cellophane in Sheets

	Pounds.	Dollars.
1918	.....	5,046
1919	.....	10,761
1920	.....	6,585
1921	.....	31,847
1922	.....	12,957
1923	.....	145,711
1924	6,276	5,607
1925	51,477	55,902
1926	98,465	117,794
1927	119,164	105,713
1928	73,051	61,433

Cement, Keene's, or Other Gypsum Cement

	Tons.	Dollars.
1914	1,225	19,290
1915	586	11,310
1916	520	8,766
1917	468	8,530
1918	305	6,362
1919	89	3,024
1920	197	5,976
1921	216	8,736
1922	186	5,788
1923	380	10,763
1924	353	10,370
1925	507	12,281
1926	517	15,459
1927	526	15,139
1928	551	11,991

Cement, Portland, White, Non-staining

	*Pounds.	Dollars.
1920	639	24,652
1921	1	31
1922	.....	.....
1923	17,948	207,812
1924	7,175,611	40,297
1925	6,060,125	29,311
1926	5,001,282	25,898
1927	6,376,242	54,100
1928	5,333,393	38,398

*Quantity stated in tons prior to 1924.

Cement, Roman, Portland and Other Hydraulic

	*Barrels of 376 pounds.	Dollars.
1871	.....	52,103
1881	.....	441,512
1891	10,906,989	3,970,565
1901	6,282,158	2,164,556
1913	313,092	124,395
1914	374,471	163,460
1915	342,292	132,864
1916	19,960	9,182
1917	4,196	2,929
1918	8,426	6,020
1919	32,135	51,063
1920	815,812	441,522
1921	1,317,177	965,591
1922	480,809	330,671
1923	2,437,715	1,243,563
1924	1,893,385	3,690,754
1925	1,876,188	3,532,937
1926	3,708,965	6,877,088
1927	2,006,905	3,587,412
1928	2,388,394	3,277,295

*Quantity stated in 100 pounds prior to 1924.

Cement, Not Elsewhere Specified

	Pounds.	Dollars.
1926	1,052,832	21,259
1927	980,512	16,916
1928	569,117	22,218

Cerium Fluoride

	Pounds.	Dollars.
1924	11,600	921
1925	36,650	1,173
1926	.....	.....
1927	39,683	2,469
1928	100	26

Cerium Nitrate

	Pounds.	Dollars.
1924	969	811
1925	4,636	4,892
1926	2,786	3,194
1927	42	71
1928	15	19

Cerium Salts, N. E. S.

	Pounds.	Dollars.
1924	3,951	1,087
1925	82,335	3,693
1926	16,970	1,493
1927	22,150	1,710
1928	67,006	5,131

Chalk Unmanufactured

	Tons.	Dollars.
1871	18,248	42,750
1881	51,546	52,784
1891	73,772	51,845
1901	.....	.....
1913	150,010	120,049
1914	128,947	102,907
1915	120,225	91,188
1916	131,368	95,861
1917	143,216	131,385
1918	107,391	120,792
1919	84,539	117,796
1920	112,292	179,543
1921	123,672	233,408
1922	78,084	123,123
1923	140,520	189,626
1924	104,850	144,071
1925	102,202	122,779
1926	104,647	126,124
1927	104,161	135,896
1928	102,089	125,382

Chalk, When Ground, Precipitated, or Otherwise Prepared, Including Tailor's, Billiard, Red or French

		Dollars.
1871	.....	4,662
1881	.....	3,851
1891	.....	18,643
1901	.....	.....
1913	.....	79,731
1914	.....	52,656
1915	.....	36,621
1916	.....	46,135
1917	.....	39,319
1918	.....	42,390
1919	.....	28,265

Stated as following classes after 1919:—

Chalk, Precipitated

	Pounds.	Dollars.
1881	.....	.....
1891	.....	4,262
1901	.....	.....
1920	932,578	23,863
1921	2,390,250	58,184
1922	2,801,299	70,000
1923	6,838,100	123,669
1924	13,160,284	119,018
1925	15,245,818	136,835
1926	19,991,865	145,429
1927	14,695,354	118,456
1928	3,246,818	97,033

Chalk, Precipitated, for Medicinal or Toilet Purposes

	Pounds.	Dollars.
1881	.....	.....
1891	433,736	18,643
1901	.....	.....
1920	1,021,885	27,999
1921	328,073	9,952
1922	95,170	1,779

Not stated after 1922.

Chamois Skins

	Dozen.	Dollars.
1913	.....	149,057
1914	.....	107,324
1915	.....	64,267
1916	.....	108,346
1917	.....	176,578
1918	.....	86,923
1919	.....	7,950
1920	.....	61,689
1921	.....	74,454
1922	.....	82,150
1923	.....	138,858
1924	.....	245,933
1925	.....	227,564
1926	.....	270,324
1927	61,325	473,126
1928	43,676	392,760

Charcoal, Wood

	Pounds.	Dollars.
1913	.....	25,557
1914	.....	60,266
1915	.....	39,978
1916	.....	45,174
1917	.....	73,583
1918	.....	10,915
1919	1,355,812	42,548
1920	4,722,508	83,329
1921	6,107,968	90,411
1922	1,244,176	14,030
1923	1,705,705	15,454
1924	6,926,320	48,928
1925	6,905,487	48,687
1926	9,604,464	54,268
1927	9,136,629	50,769
1928	7,548,863	58,205

Chestnut Extract for Tanning

	Pounds.	Dollars.
1922	2,420	116
1923	.....	.....
1924	1,400	131
1925	2,926	87
1926	200	18
1927	.....	.....
1928	.....	.....

Chicory Root, Raw but Unground

	Pounds.	Dollars.
1913	2,208,057	32,939
1914	1,580,925	22,028
1915	471,966	6,717
1916	.....	.....
1917	241,299	29,131
1918	4,577	501
1919	.....	.....
1920	1,526,306	82,989
1921	6,052,078	391,923
1922	292	70
1923	468,733	10,390

Included in "Acorns, Chicory and Dandelion Root" after 1923.

China Clay, or Kaolin, Crude

	Tons.	Dollars.
1881	6,887	66,654
1891	33,706	232,699
1901	105,198	701,790
1913	263,688	1,753,822
1914	241,986	1,590,054
1915	230,494	1,506,555
1916	228,536	1,376,990
1917	206,729	1,212,099
1918	192,705	1,303,668
1919	146,260	1,436,786
1920	213,713	2,481,396
1921	247,267	2,805,865
1922	192,661	2,037,912
1923	255,132	2,762,642
1924	255,502	2,650,330
1925	321,667	3,160,686
1926	308,178	3,039,567
1927	326,737	3,169,344
1928	259,694	2,519,558

Chloral Hydrate

	Pounds.	Dollars.
1901	4,485	2,993
1913	.....	.....
1914	644	241
1915	112	25
1916	1	2
1917	.....	.....
1918	1,057	1,599
1919	.....	.....
1920	.....	.....
1921	1,850	1,711
1922	55	57
1923	7,489	3,005
1924	.....	.....
1925	3,696	3,150
1926	2	2
1927	.....	.....
1928	888	337

Chloroform

	Pounds.	Dollars.
1871	62	107
1881	50	33
1891	.....	.....
1901	259	79
1913	942	1,646
1914	2,444	930
1915	26	43
1916	.....	.....
1917	.....	.....
1918	1	1
1919	54	40
1920	2	4
1921	.....	.....
1922	4,512	615
1923	396	136
1924	.....	.....
1925	88	101
1926	18	19
1927	11	30
1928	10	34

Chlorophyll Extract

	Pounds.	Dollars.
1912	4,461	3,586
1913	7,508	8,544
1914	10,125	8,503
1915	3,490	3,671
1916	190	192
1917	.....	.....
1918	199	168
1919	363	511
1920	8	14
1921	1,248	2,242
1922	2,751	3,517
1923	1,881	1,716
1924	3,870	5,393
1925	2,259	4,322
1926	2,569	6,900
1927	12,620	11,980
1928	6,834	9,991

Chrome or Chromium Metal

	*Pounds.	Dollars.
1913	322	89,291
1914	208	25,976
1915	81	6,943
1916	10	1,998
1917	10	1,851
1918	.....	.....
1919	.....	.....
1920	2,553,255	279,854
1921	2,945,624	315,504
1922	985,243	115,723
1923	3,032,761	271,770
1924	157,351	28,823
1925	9,475	4,005
1926	2,240	1,529
1927	.....	.....
1928	45,194	5,387

*Quantity stated in tons prior to 1920.

Chrome Ore or Chromite

	Tons.	Dollars.
1891	4,093	56,982
1901	12,390	214,762
1913	49,772	573,664
1914	85,892	777,166
1915	159,421	772,220
1916	107,069	1,196,250
1917	113,385	1,648,728
1918	77,863	1,555,861
1919	71,592	2,439,830
1920	103,625	1,418,570
1921	152,784	1,689,202
1922	54,820	413,208
1923	134,757	1,136,125
1924	113,785	980,482
1925	132,701	1,207,517
1926	160,742	1,302,075
1927	257,604	1,996,819
1928	191,727	1,572,332

Chrome Yellow, Green and Other Chromium Colors

	Pounds.	Dollars.
1891	76,601	11,194
1901	133,029	19,994
1913	148,299	23,405
1914	134,400	22,412
1915	124,538	21,171
1916	27,929	5,586
1917	28,078	4,202
1918	1,810	459
1919	5,127	2,074
1920	34,799	19,164
1921	322,050	23,894
1922	14,835	3,954
1923	88,837	15,320
1924	67,693	15,338
1925	109,408	24,936
1926	177,696	42,157
1927	235,094	49,853
1928	159,919	36,764

Chromium Chloride

	Pounds.	Dollars.
1924	6,571	968
1925	.....	.....
1926	25,325	1,651
1927	.....	.....
1928	.....	.....

Chromium Sulphate

	Pounds.	Dollars.
1924	2,524	372
1925	.....	.....
1926	220	158
1927	40,960	3,112
1928	.....	.....

Chrysarobin and Its Salts

	Pounds.	Dollars.
1924	224	340
1925	312	1,014

Not stated after 1925.

Cinchona Bark, Alkaloids or Salts of, Not Elsewhere Stated

	Ounces.	Dollars.
1891	112,013	29,977
1901	817,315	289,630
1913	648,865	131,692
1914	452,292	117,915
1915	203,330	66,004
1916	231,100	82,167
1917	623,947	324,438
1918	3,131,958	769,403
1919	1,147,102	272,631
1920	1,112,598	268,509
1921	1,666,688	504,489
1922	766,582	276,833
1923	3,405,084	1,106,520
1924	125,141	57,347
1925	361,153	177,866
1926	386,906	98,914
1927	381,356	105,490
1928	213,938	30,465

Cinchonidia

	Ounces.	Dollars.
1891	156,229	3,856
1901	28,000	9,465
1913	309,395	43,680
1914	205,006	19,502
1915	69,487	8,223
1916	131,481	15,914
1917	221,272	17,590
1918	86,482	20,708
1919	86,000	25,293
1920	40,188	11,065
1921	89,844	33,558
1922	92,688	53,486

Not stated after 1922.

Cinchonidine and Its Salts

	Ounces.	Dollars.
1924	355,902	140,963
1925	310,640	118,596
1926	437,512	164,647
1927	381,400	128,870
1928	214,973	67,155

Cinchonine and Its Salts

	Ounces.	Dollars.
1924	96,940	42,378
1925	52,500	18,881
1926	60,596	16,469
1927	93,400	26,644
1928	101,000	26,242

Cinnamon, and Chips of, Unground

	Pounds.	Dollars.
1871	21,932	12,147
1881	10,397	3,853
1891	38,671	4,537
1901	483,992	77,685
1913	1,405,832	188,267
1914	303,967	44,304
1915	528,254	74,067
1916	410,594	50,020
1917	564,248	77,279
1918	688,466	111,004
1919	537,119	99,881
1920	607,193	143,254
1921	524,111	138,660
1922	415,863	66,967
1923	455,787	73,179
1924	430,858	67,817
1925	317,985	76,945
1926	285,256	87,166
1927	297,713	111,278
1928	245,146	113,776

Imports Into the United States

Civet

	Ounces.	Dollars.
1891	3,952	6,294
1901	4,397	9,473
1913	11,269	15,557
1914	2,761	3,978
1915	1,820	2,080
1916	9,600	12,099
1917	9,230	13,148
1918	9,766	11,877
1919	15,315	17,253
1920	10,554	12,048
1921	8,662	16,877
1922	13,545	18,684
1923	17,599	31,313
1924	13,694	28,545
1925	15,000	34,646
1926	9,814	20,647
1927	11,211	22,553
1928	11,739	24,708

Clay, Common Blue and Gross Almerode Glass-Pot Clay, Unwrought

	Tons.	Dollars.
1891	2,965	38,621
1901	5,423	67,763
1913	23,218	211,005
1914	20,587	180,524
1915	12,274	107,146
1916	3,488	16,088
1917	412	2,353
1918	64	869
1919	80	493
1920	2,456	62,507
1921	4,564	98,029
1922	708	15,376
1923	9,182	101,230
1924	10,600	101,653
1925	6,661	66,632
1926	6,543	68,008
1927	5,479	52,774
1928	5,349	53,616

Clay, Plasticine and Other Modeling

	Pounds.	Dollars.
1913	.....	8,519
1914	.....	9,424
1915	.....	6,541
1916	.....	7,978
1917	.....	12,468
1918	.....	7,083
1919	37,875	6,025
1920	84,092	12,162
1921	139,475	22,150
1922	99,569	13,958
1923	52,835	8,313
1924	13,500	1,961
1925	49,003	6,372
1926	30,770	4,283
1927	53,310	9,071
1928	27,000	4,439

Clays, or Earths, Crude, Not Specially Provided For

	Tons.	Dollars.
1871	12,160	103,144
1881	12,444	123,545
1891	19,582	154,518
1901	25,146	144,050
1913	37,370	167,614
1914	37,372	210,574
1915	36,072	158,041
1916	34,677	148,916
1917	30,942	138,171
1918	24,474	144,096
1919	23,199	199,332
1920	23,824	200,868
1921	41,259	396,308
1922	30,024	273,257
1923	48,967	398,541
1924	59,511	557,239
1925	65,915	654,365
1926	67,969	614,255
1927	51,699	533,780
1928	42,183	411,384

Clover Flowers

	Pounds.	Dollars.
1924	75,512	38,542
1925	.....	.....
1926	19,176	2,142
1927	24,948	1,828
1928	41,448	2,434

Cloves, Unground

	Pounds.	Dollars.
1871	1,137,896	64,547
1881	1,046,911	310,543
1891	2,510,066	284,181
1901	2,120,386	170,068
1913	2,734,992	481,751
1914	5,054,621	597,310
1915	5,346,665	595,546
1916	7,066,237	791,708
1917	3,867,851	532,345
1918	5,521,919	1,166,879
1920	6,730,252	2,101,971
1919	3,841,197	1,072,137
1921	4,124,625	1,146,930
1922	6,013,990	1,267,248
1923	6,952,152	1,174,679
1924	5,618,913	1,351,016
1925	5,564,074	1,167,988
1926	5,751,901	1,209,354
1927	6,468,390	1,152,794
1928	5,198,571	823,356

Clove Stems, Ground

	Pounds.	Dollars.
1928	19,000	6,950

Clove Stems, Unground

	Pounds.	Dollars.
1871	52,446	1,452
1881	118,968	8,435
1891	425,137	8,660
1901	295,696	8,271
1913	32,830	1,333
1914	268	20
1915	4,391	760
1916	57,160	4,009
1917	1,120	174
1918	46,432	6,990
1919	.....	.....
1920	2,905,811	356,363
1921	914,115	61,796
1922	169,515	9,000
1923	49,936	9,999
1924	27,303	4,823
1925	.....	.....
1926	5,844	1,423
1927	1,000	361
1928	5,990	1,249

Cobalt Linoleate

	Pounds.	Dollars.
1925	807	294
1926	4,989	1,854
1927	24	22
1928	.....	.....

Cobalt Metal

	Pounds	Dollars
1919	156,372	511,383
1920	99,595	228,891
1921	133,857	322,293
1922	4,252	11,143
1923	264,933	555,295
1924	156,147	366,588
1925	133,257	286,123
1926	250,257	536,274
1927	477,617	1,072,879
1928	356,797	756,833

Cobalt and Cobalt Ote, and Zaffer

	Pounds.	Dollars
1881	.....	.....
1891	2,024	54
1901	.....	.....
1913	310,951	80,718
1914	197,009	115,088
1915	24,095	8,226
1916	144,170	186,124
1917	136,883	191,986
1918	161,695	306,310

Stated separately after 1918.

Cobalt Ore

	Pounds.	Dollars.
1919	220,125	55,197
1920	17,035	2,828
1921	13,089	4,794
1922	7,657	3,235
1923	48,447	55,918
1924	35,701	40,142
1925	36,685	21,145
1926	30,672	74,349
1927	194,969	9,738
1928	75,777	12,558

Cobalt Oxide

	Pounds.	Dollars.
1871	.....	2,766
1881	21,844	15,837
1891	34,700	63,433
1901	61,962	111,740
1913	23,729	14,406
1914	109,584	95,026
1915	109,155	180,087
1916	238,934	228,745
1917	246,822	220,268
1918	220,793	248,172
1919	143,008	215,441
1920	199,097	282,457
1921	187,177	442,501
1922	160,617	316,393
1923	288,249	579,081
1924	232,020	446,217
1925	244,048	470,782
1926	322,762	614,669
1927	345,326	658,435
1928	335,552	641,032

Cobalt Sulphate

	Pounds.	Dollars.
1924	28,659	17,351
1925	.....	.....
1926	28,880	17,228
1927	34,071	17,639
1928	68,180	38,749

Cobalt, Salts and Compounds, N. E. S.

	Pounds.	Dollars.
1924	706	697
1925	160	261
1926	412	989
1927	186	289
1928	153	178

Coca Leaves

	Pounds.	Dollars
1901	.....	489
1913	1,175,780	139,035
1914	711,564	91,384
1915	1,048,312	98,870
1916	947,537	100,627
1917	834,932	90,131
1918	1,059,484	179,312
1919	1,023,322	186,477
1920	903,552	211,514
1921	806,308	63,767
1922	33,058	5,170
1923	302,352	91,960
1924	221,519	44,574
1925	99,196	16,222
1926	261,114	72,933
1927	263,691	68,786
1928	235,288	35,669

Cocaine, Ecgonine, and Salts of Cocaine

	Pounds.	Dollars
1901	.....	176,948
1913	2,715	4,835
1914	3,291	4,101
1915	179	422
1916	4,275	5,887
1917	19,388	38,627
1918	8,597	35,358
1919	19,382	68,584
1920	11,614	29,217
1921	6,172	22,521
1922	7,376	16,064

No imports allowed after 1922.

Cocoa Butter

	Pounds.	Dollars
1913	3,634,998	900,568
1914	2,876,967	801,259
1915	126,028	35,863
1916	69,888	15,824
1917	24,289	7,581
1918	14,512	4,569
1919	30,716	3,310
1920	9,439	4,486
1921	441,633	96,172
1922	6,335,006	1,550,062
1923	2,338,242	590,989
1924	1,022,320	179,049
1925	728,483	123,420
1926	17,997	6,630
1927	247,867	71,135
1928	23,821	9,290

Colchicum Seeds and Root

	Pounds.	Dollars
1924	17,237	872
1925	13,589	1,218
1926	3,493	404
1927	12,199	1,397
1928	20,493	3,765

Collodion and Other Liquid Solutions of Pyroxylin

	Pounds.	Dollars
1922	12,051	4,695
1923	73,107	50,978
1924	122,279	108,278
1925	103,952	92,024
1926	92,136	73,798
1927	288,451	254,111
1928	340,997	247,983

Cocculus Indicus, Crude

	Pounds.	Dollars
1881	1,081	22
1891	1,741	42
1901	9,192	166
1913	.....	.....
1914	4,446	121
1915	9,550	386
1916	.....	.....
1917	7,410	2,818
1918	.....	.....
1919	26,116	10,122
1920	4,525	612
1921	23,832	1,560
1922	.....	.....
1923	460	92
1924	44,920	1,557
1925	7,822	341
1926	5,636	350
1927	.....	.....
1928	.....	.....

Cochineal

	Pounds.	Dollars.
1871	1,869,094	1,184,245
1881	1,072,144	527,886
1891	86,797	19,985
1901	114,414	20,414
1913	109,089	44,249
1914	138,139	52,260
1915	155,430	38,484
1916	772,416	358,914
1917	124,745	48,802
1918	160,547	75,924
1919	177,585	70,229
1920	166,014	72,718
1921	100,844	89,857
1922	191,103	97,011
1923	228,702	87,047
1924	118,856	38,438
1925	115,084	36,721
1926	206,091	67,507
1927	117,843	58,616
1928	91,686	46,710

Colocynth

	Pounds.	Dollars
1924	28,807	4,388
1925	54,391	8,494
1926	10,474	1,839
1927	40,908	9,917
1928	51,695	17,180

Colombo Root

	Pounds.	Dollars.
1881	8,336	814
1891	.....	.....
1901	43,040	1,466
1913	27,565	794
1914	4,587	134
1915	8,751	458
1916	48,867	3,442
1917	92,349	4,999
1918	20,759	3,061
1919	2,195	546
1920	130,862	16,186
1921	425,190	32,646
1922	.....	.....
1923	2,440	22
1924	53,983	688
1925	.....	.....
1926	34,018	931
1927	26,801	979
1928	63,672	2,237

Colors Ground in Japan

	Pounds	Dollars
1924	7,731	418
1925	250	83
1926	849	254
1927	.....	.....
1928	.....	.....

Colors Ground in Water, and Fresco Colors

	Pounds.	Dollars
1924	116	104
1925	441	287
1926	215	25,
1927	1,393	510
1928	247	94

Copperas (Ferrous Sulphate, Sulphate of Iron)

	Pounds.	Dollars
1871	1,842,308	9,083
1881	151,496	956
1891	896,937	4,104
1901	24,786	243
1913	6,196	174
1914	1,120	18
1915	4,750	95
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	377,613	4,868
1921	119,947	1,733
1922	240,517	2,022
1923	758,046	7,870
1924	1,505,794	11,[illegible]
1925	839,492	6,030
1926	237,514	4,163
1927	595,807	9,449
1928	936,943	12,665

Copper Oxide and Suboxide

	Pounds.	Dollars
1924	46,389	7,047
1925	91,245	15,537
1926	192,555	34,419
1927	326,447	54,428
1928	254,015	45,656

Copper Sulphate or Blue Vitriol

	Pounds.	Dollars.
1871	45,809	2,339
1881	20	3
1891	8,432	810
1901	1,788	98
1913	11,051	728
1914	114,730	5,486
1915	45,239	2,156
1916	184,182	17,651
1917	15,952	2,283
1918	98,143	9,035
1919	120	36
1920	72,605	7,243
1921	676,628	38,370
1922	529,557	23,412
1923	10,083,949	518,381
1924	3,317,880	163,965
1925	1,484,146	66,404
1926	2,870,013	140,676
1927	981,623	44,264
1928	2,240,608	107,822

Copra

	Pounds.	Dollars
1913	84,283,592	1,531,864
1914	44,459,158	2,395,105
1915	88,690,392	3,390,157
1916	108,507,765	4,551,422
1917	247,043,127	12,530,112
1918	486,833,808	26,987,621
1919	300,965,246	19,847,782
1920	218,521,946	15,171,465
1921	192,245,515	9,923,789
1922	255,721,813	9,403,636
1923	306,089,995	12,604,008
1924	299,783,531	12,804,198
1925	328,651,513	15,482,353
1926	392,759,250	20,126,309
1927	454,545,641	21,662,071
1928	456,158,309	21,371,802

Cork, Artificial and Composition or Compressed Cork

	Pounds.	Dollars.
1919	175,381	116,505
1920	.....	.....
1921	6	1
1922	220	41
1923	209	191
1924	594	390
1925	1,143	220
1926	7,151	1,322
1927	1,249	294
1928	4,015	1,057

Cork Bark, Cut Into Squares, Cubes or Quarters

	Pounds.	Dollars.
1919	5,653	2,827
1920	1,353	482
1921	524	145
1922	1,174	106
1923	799	218
1924	793	253
1925	6,813	720
1926	5,339	739
1927	2,709	918
1928	8,222	2,923

Cork Disks, Wafers or Washers

	Pounds.	Dollars.
1914	2,065,567	1,675,683
1915	1,326,864	1,165,540
1916	695,776	487,588
1917	2,815,515	1,973,342
1918	2,316,018	1,445,851
1919	706,252	552,857
1920	1,377,958	857,525
1921	995,208	688,193
1922	375,463	247,049
1923	844,973	199,068
1924	327,622	307,688
1925	632,238	558,483
1926	996,282	826,946
1927	721,876	640,000
1928	482,642	550,841

Cork, Granulated or Ground

	Pounds.	Dollars.
1924	265,249	4,716
1925	354,189	4,203
1926	1,311,760	20,938
1927	1,760,216	31,308
1928	302,056	8,663

Cork Insulation

	Pounds.	Dollars.
1917	4,038,372	181,698
1918	3,771,294	181,402
1919	2,884,807	177,389
1920	5,710,418	543,494
1921	9,112,352	779,673
1922	13,353,866	603,165
1923	12,720,305	605,375
1924	20,893,457	728,359
1925	21,598,615	818,333
1926	30,758,475	1,401,858
1927	47,164,341	2,861,616
1928	40,298,873	2,163,339

Cork Paper

	Pounds.	Dollars.
1917	.....	138,214
1918	.....	107,462
1919	.....	105,751
1920	.....	85,349
1921	.....	40,243
1922	.....	23,242
1923	.....	13,119
1924	1,602	1,377
1925	111	774
1926	383	1,085
1927	758	1,346
1928	1,832	908

Cork Stoppers

	Pounds.	Dollars.
1891	.....	428,635
1901	1,286,593	534,064
1914	888,500	728,317
1915	326,887	250,342
1916	269,806	170,746
1917	437,550	275,161
1918	365,877	198,378
1919	119,000	69,657
1920	139,629	120,389
1921	218,932	156,512
1922	136,118	87,696
1923	209,677	137,074
1924	272,784	359,869
1925	307,351	413,803
1926	515,692	405,475
1927	427,434	534,462
1928	476,304	761,961

Cork Tile

	*Sq. ft.	Dollars.
1924	16,800	1,875
1925	88,968	7,981
1926	1,020,817	54,535
1927	584,416	79,828
1928	571,978	40,217

*Quantity stated in pounds prior to 1927.

Cork Waste, Shavings and Refuse

	Pounds.	Dollars.
1917	120,677,624	1,743,184
1918	95,051,164	1,582,755
1919	101,762,928	1,827,541
1920	146,649,475	2,813,247
1921	130,669,984	3,161,790
1922	151,425,654	2,051,339
1923	167,371,170	2,082,557
1924	150,081,056	1,656,009
1925	138,908,958	1,486,135
1926	153,804,449	1,950,273
1927	131,531,424	2,518,576
1928	101,101,424	2,370,498

Corkwood, or Cork Bark, Unmanufactured

	Pounds.	Dollars.
1871	.....	359,626
1881	.....	787,033
1891	.....	1,249,008
1901	.....	1,727,921
1913	133,227,875	3,152,070
1914	88,282,529	2,646,018
1915	24,897,803	1,420,581
1916	32,866,700	1,517,366
1917	40,273,005	2,125,533
1918	30,750,497	1,479,072
1919	26,505,971	1,736,100
1920	27,376,326	1,456,276
1921	47,804,241	2,373,006
1922	37,434,747	1,023,587
1923	68,317,945	1,826,133
1924	57,324,032	1,541,530
1925	66,857,680	1,265,806
1926	110,468,994	2,350,144
1927	132,581,654	3,088,008
1928	101,149,207	3,053,915

Corrosive Sublimate

	Pounds.	Dollars.
1920	3,306	2,258
1921	665	483
1922	.....	.....
1923	97	94
1924	3,952	2,044
1925	1,402	877
1926	1,482	825
1927	3,979	4,440
1928	2,262	3,069

Cosmetics and Toilet Preparations, Including Tooth Pastes, Powders, Etc.

	Pounds.	Dollars.
1913	.....	1,096,360
1914	.....	1,096,211
1915	.....	1,542,131
1916	.....	1,271,614
1917	.....	1,702,289
1918	.....	1,502,718
1919	817,171	1,549,184
1920	908,278	456,901
1921	399,657	410,854
1922	1,250,502	944,575
1923	1,346,505	804,433
1924	1,221,220	718,969

Subdivided after 1924.

Imports Into the United States

Cosmetics and Toilet Preparations, Including Tooth Paste, Powders, Etc., Containing Alcohol

	Pounds.	Dollars.
1925	77,220	179,726
1926	58,879	140,538
1927	44,182	102,390
1928	40,367	108,215

Cosmetics and Toilet Preparations, Including Tooth Paste, Powders, Etc., Not Containing Alcohol

	Pounds.	Dollars.
1925	1,014,140	576,070
1926	1,138,535	552,340
1927	1,177,824	663,868
1928	1,021,980	613,315

Crayons, Including Charcoal Crayons or Fusains

	*Gross.	Dollars.
1871	.....	2,582
1881	.....	10,047
1891	.....	18,028
1901	.....	9,030
1913	.....	12,925
1914	.....	18,359
1915	.....	15,090
1916	.....	11,535
1917	.....	12,945
1918	.....	10,282
1919	14,330	11,376
1920	16,777	11,284
1921	40,673	16,363
1922	97,358	27,525
1923	80,660	20,212
1924	29,653	25,148
1925	22,392	15,794
1926	25,945	20,747
1927	29,512	22,971
1928	40,969	29,024

* Quantity stated in pounds prior to 1925.

Cream of Tartar

	Pounds.	Dollars.
1871	3,605,401	639,467
1881	23	7
1891	778	158
1901	145	59
1913	66,718	11,797
1914	812,857	156,987
1915	764,868	166,922
1916	38,588	13,479
1917	98,609	28,488
1918	68,586	16,068
1919	.....	.....
1920	123,017	52,300
1921	578,641	166,048
1923	1,286,977	230,346
1924	1,823,108	230,538
1925	652,129	69,565
1926	318,532	43,342
1927	218,392	31,632
1928	194,414	39,330

Crotonaldehyde

	Pounds.	Dollars.
1924	2,072	429
1925	9,102	3,539
1926	6,449	2,248
1927	38,948	8,672
1928	.....	.....

Crucibles, Graphite

	Number.	Dollars.
1924	1,555	450
1925	.....	.....
1926	9,588	7,394
1927	5,524	5,850
1928	836	1,523

Crucibles of Stone and Earthenware, Undecorated

	Number.	Dollars.
1914	.....	10,974
1915	.....	6,764
1916	.....	7,641
1917	.....	58,161
1918	.....	7,880
1919	.....	1,432
1920	.....	9,880
1921	.....	8,634
1922	.....	6,951
1923	.....	10,586
1924	99,309	8,680
1925	62,135	6,111
1926	154,114	8,592
1927	100,405	6,702
1928	110,917	7,480

Cryolite, or Kryolith

	Tons.	Dollars.
1871	.....	71,058
1881	.....	103,529
1891	7,129	95,405
1901	6,167	82,533
1913	2,519	52,440
1914	2,157	47,435
1915	4,569	91,417
1916	3,962	84,497
1917	3,835	163,475
1918	4,383	218,600
1919	19,951	97,500
1920	2,130	106,500
1921	3,866	194,158
1922	3,477	296,888
1923	5,125	256,759
1924	5,130	257,200
1925	6,345	324,790
1926	9,892	699,286
1927	7,713	564,233
1928	5,165	427,747

Cubebs

	Pounds.	Dollars.
1871	64,431	3,686
1881	181,850	21,505
1891	65,404	46,530
1901	310,172	22,248
1913	166,307	53,663
1914	105,665	32,456
1915	87,538	23,451
1916	80,300	28,566
1917	123,558	43,442
1918	76,895	45,034
1919	147,604	87,564
1920	139,158	103,026
1921	127,667	121,595
1922	40,482	23,074
1923	106,068	64,726
1924	91,087	43,558
1925	55,018	25,959
1926	95,279	33,566
1927	71,675	22,048
1928	90,695	24,916

Cudbear, Archil and Litmus

	Pounds.	Dollars.
1871	.....	40,253
1881	1,931,357	232,360
1891	402,241	37,889
1901	44,332	2,964
1913	27,971	1,775
1914	15,658	1,061
1915	24,827	1,692
1916	55,948	6,512
1917	49,163	6,106
1918	62,504	10,166
1919	44,432	6,012
1920	34,004	4,857
1921	46,647	7,874
1922	29,059	4,984
1923	.....	.....
1924	261,866	29,835
1925	179,255	27,089
1926	160,616	21,429
1927	150,804	25,937
1928	134,687	25,535

Cumene, Cymene

	Pounds.	Dollars.
1925	499	135
1926	.....	.....
1927	.....	.....
1928	.....	.....

Curry and Curry Powder

	Pounds.	Dollars.
1871	.....	599
1881	.....	3,893
1891	.....	5,103
1901	.....	7,852
1913	.....	12,087
1914	.....	11,807
1915	.....	9,872
1916	.....	8,669
1917	.....	10,624
1918	.....	9,248
1919	11,800	4,606
1920	35,975	13,651
1921	32,403	10,206
1922	20,537	8,465
1923	19,871	8,433
1924	31,464	12,436
1925	31,708	11,661
1926	33,732	13,925
1927	37,903	15,840
1928	36,680	15,580

Cutch Extract

	Pounds.	Dollars.
1924	540,161	37,124
1925	422,719	31,541
1926	319,414	29,553
1927	692,136	41,948
1928	273,322	19,616

Cuttlefish Bone

	Pounds.	Dollars.
1901	193,494	23,590
1913	218,317	30,355
1914	309,540	56,051
1915	282,239	52,041
1916	214,659	36,576
1917	230,271	52,838
1918	247,250	57,536
1919	186,633	73,380
1920	360,538	122,047
1921	375,251	86,812
1922	206,028	29,020
1924	345,245	43,947
1925	248,461	39,559
1926	298,205	41,519
1927	257,993	27,229
1928	306,943	40,126

Cyanide Salts, Mixtures, and Compounds

	Pounds.	Dollars.
1924	1,027,078	71,438
1925	230,239	19,572
1926	128,763	9,303
1927	66,151	54,269
1928	227,095	98,906

Dandelion Root

	Pounds.	Dollars.
1881	33,119	2,966
1891	59,929	3,593
1901	73,573	4,078
1913	108,434	8,269
1914	109,658	9,389
1915	112,814	12,137
1916	29,378	6,487
1917	108,713	23,912
1918	149,088	37,773
1919	77,165	16,600
1920	201,708	28,139
1921	182,907	29,021
1922	114,808	6,989
1923	97,564	9,209

Included in "Acorns, Chicory and Dandelion Root" after 1923.

Decalcomania Paper, Duplex, Not Printed

	Pounds.	Dollars.
1927	700,052	162,978
1928	667,537	155,546

Decalcomanias in Ceramic Colors

	Pounds.	Dollars.
1913	80,094	144,890
1914	45,999	92,528
1915	22,411	62,462
1916	11,176	32,882
1917	8,471	27,393
1918	5,195	22,206
1919	2,984	14,304
1920	4,905	19,616
1921	6,301	30,741
1922	2,842	19,362
1923	94,073	136,331
1924	198,329	293,167
1925	233,134	338,948
1926	317,073	462,385
1927	364,927	486,683
1928	360,497	473,783

Decalcomanias Backed with Metal Leaf

	Pounds.	Dollars.
1924	138	327
1925	886	1,529
1926	29	181
1927	127	944
1928	33	310

Decalcomanias, Other, Except Toys

	Pounds.	Dollars.
1913	41,370	42,001
1914	132,805	131,494
1915	90,040	87,641
1916	51,840	55,634
1917	66,513	69,844
1918	34,858	41,300
1919	55,236	85,068
1920	71,740	78,516
1921	137,825	181,380
1922	138,244	181,071
1923	53,559	61,522
1924	41,884	52,564
1925	33,966	55,253
1926	43,033	73,824
1927	53,163	74,023
1928	41,423	75,970

Dextrin Made from Potato Starch or Potato Flour

	Pounds.	Dollars.
1914	5,226,421	162,688
1915	4,595,949	154,337
1916	720,106	40,[illegible]
1917	210,948	17,85[illegible]
1918	99,228	9,116
1919	421,971	59,353
1920	681,224	58,337
1921	566,670	35,524
1922	1,367,844	80,858
1923	1,711,615	66,956
1924	1,794,571	74,618
1925	1,131,582	59,542
1926	1,445,793	66,649
1927	1,199,853	57,206
1928	1,416,607	69,693

Dextrose and Dextrose Syrup

	Pounds.	Dollars.
1924	33,266	1,344
1925	1,599	189
1926	.....	.....
1927	1,359	353
1928	2,815	318

Diamonds, Glaziers', Engravers' and Miners', Unset

	Carats.	Dollars.
1871	.....	976
1881	.....	233,596
1891	.....	407,188
1901	.....	4,071
1913	.....	368,241
1914	.....	101,839
1915	.....	258,272
1916	.....	738,085
1917	.....	948,592
1918	.....	1,049,975
1919	18,736	632,129
1920	42,161	1,270,040
1921	41,068	1,088,441
1922	20,927	458,562
1923	36,611	1,017,689
1924	32,174	1,098,337
1925	44,455	1,559,377
1926	43,003	2,050,758
1927	39,969	2,026,788
1928	39,093	2,620,105

Digitalis

	Pounds.	Dollars.
1924	16,777	1,756
1925	20,190	1,543
1926	36,276	5,815
1927	60,529	9,317
1928	70,518	13,984

Digitalis Glucosides and Active Principles of Digitalis

	Pounds.	Dollars.
1924	36	1,614
1925	50	177

Not stated after 1925.

Dihydroxnyaphthalene and Dianisidin

	Pounds.	Dollars.
1926	1,000	540
1927	55	142
1928	10,750	6,683

Dimethylanilin and Benzylethylanilin

	Pounds.	Dollars.
1921	8,188,532	165,639
1922	23,565	3,828
1923	1	2
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	2,383	2,219
1928	.....	.....

Diphenylamine

	Pounds.	Dollars.
1924	1,131	218
1925	23,587	8,158
1927	400	1,315
1926	32	104
1928	12,250	13,342

Divi-Divi

	Pounds.	Dollars.
1901	853,573	12,505
1913	314,491	4,143
1914	29,032	461
1915	4,513,219	71,397
1916	16,467,455	310,572
1917	15,969,144	293,191
1918	15,739,331	274,891
1919	26,556,867	522,913
1920	26,632,840	550,972
1922	7,558,995	91,405
1923	11,153,869	145,125
1924	4,923,697	78,589
1925	3,912,016	79,707
1926	1,764,547	35,641
1927	3,646,775	80,226
1928	1,607,320	40,457

Divi-Divi Extract for Tanning

	Pounds.	Dollars.
1926	1,202	67
1927	.....	.....
1928	.....	.....

Dyeing Materials, Crude, Not Elsewhere Specified

	*Pounds.	Dollars.
1871	16,598	647,224
1881	4,947	159,900
1891	1,002	28,960
1901	14,985	151,849
1913	155	1,794
1914	371	6,097
1915	1,530	20,674
1916	7,043	172,765
1917	6,745	48,211
1918	16,489	425,942
1919	2,158	52,196
1920	2,339	49,913
1921	2,342	51,082
1922	4,731	118,406
1923	14,663	477,328
1923	6,912,336	174,955
1925	9,140,366	152,334
1926	7,250,262	111,016
1927	7,059,379	66,473
1928	8,192,131	50,350

* Quantity stated in tons prior to 1923.

Dye Extracts, Nonalcoholic and Not Medicinal

	Pounds.	Dollars.
1924	1,297,786	118,435
1925	511,139	72,565
1926	241,277	27,504
1927	580,697	65,760
1928	330,311	32,089

Eggs, Dried

	Pounds.	Dollars.
1913	20,284	7,537
1914	38,061	12,640
1915	30,575	10,385
1916	38,993	9,875
1917	1,590,563	417,417
1918	1,598,630	429,167
1919	741,972	419,799
1920	3,311,350	1,812,648
1921	2,419,997	1,086,318
1922	1,964,725	730,919
1923	2,355,214	584,016
1924	2,004,458	840,063
1925	2,218,571	1,045,553
1926	1,913,884	1,021,307
1927	1,603,075	819,493
1928	530,836	278,536

Eggs, Frozen or Otherwise Prepared or Preserved

	Pounds.	Dollars.
1914	2,647,974	305,232
1915	2,815,511	198,654
1916	3,756,188	248,997
1917	2,171,338	178,627
1918	1,250,574	153,879
1919	1,210,321	245,494
1920	6,579,489	1,030,364
1921	10,133,235	1,593,782
1922	6,351,612	678,[illegible]
1923	5,546,892	612
1924	5,324,991	824
1925	9,181,565	1,35[illegible]
1926	10,252,586	1,587
1927	9,041,405	1,633,[illegible]
1928	689,529	117,8[illegible]

Eggs, Poultry, in the Shell

	Dozens.	Dollars.
1871	.....	569,493
1881	8,569,568	1,087,250
1891	8,219,339	1,186,074
1901	127,695	10,572
1913	1,271,765	101,714
1914	5,823,749	1,059,595
1915	3,058,863	440,067
1916	733,313	110,638
1917	1,103,187	267,822
1918	1,619,259	482,636
1919	846,573	232,491
1920	1,348,383	466,753
1921	3,315,805	1,056,359
1922	1,223,540	327,566
1923	533,659	158,584
1924	372,507	110,488
1925	550,006	159,588
1926	275,873	97,912
1927	285,672	96,564
1928	256,945	77,227

Egg Yolks

	Pounds.	Dollars.
1881	.....	2,454
1891	.....	18
1901	.....	195
1913	227,457	37,077
1914	675,058	168,972
1915	1,382,408	257,60[illegible]
1916	2,919,[illegible]	573,15
1917	6,924,071	1,332,096
1918	8,077,730	2,029,420
1919	4,746,015	1,648,564
1920	9,044,186	3,909,9[illegible]
1921	10,312,080	3,206,[illegible]
1922	8,379,098	1,873,[illegible]
1923	6,572,885	1,433,

Subdivided after 1923.

Egg Yolks, Dried

	Pounds.	Dollars.
1924	3,067,153	904,563
1925	4,775,757	1,236,180
1926	5,912,393	1,552,840
1927	4,063,733	1,366,025
1928	3,424,639	1,560,521

Egg Yolks, Frozen or Otherwise Prepared

	Pounds.	Dollars.
1924	3,272,392	569,887
1925	5,640,653	950,899
1926	4,849,098	819,478
1927	4,537,387	798,933
1928	1,402,396	229,927

Ergot

	Pounds.	Dollars.
1871	17,805	6,898
1881	137,618	45,156
1891	88,620	26,932
1901	164,446	80,952
1913	223,793	208,344
1914	185,704	102,640
1915	141,915	92,459
1916	12,015	13,896
1917	165,701	80,647
1918	140,474	81,267
1919	116,813	149,890
1920	125,021	361,358
1921	213,491	690,224
1922	167,315	155,921
1923	273,784	140,055
1924	195,425	52,307
1925	163,759	45,778
1926	192,056	113,180
1927	224,622	195,140
1928	252,058	265,808

Ethers, Amyl Acetate

	Pounds.	Dollars.
1924	13,065	4,426
1925	6,921	2,336
1926	18,692	7,154
1927	626	334
1928	84	54

Ethers, Butyl Acetate

	Pounds.	Dollars.
*1928	1,673,521	225,938

* January-June.

Ethers, Diethyl Sulphate

	Pounds.	Dollars.
1924	83	246
1925	375	1,353
1926	311	2,035
1927	30,066	7,221
1928	22,447	5,549

Ethers, Ethyl Acetate, or Acetic Ether

	Pounds.	Dollars.
1920	400	493
1921	.....	.....
1922	230	294
1923	27,163	11,658
1924	267	40
1925	1,141	719
1926	12,477	1,621
1927	21	4
1928	3,748	391

Imports Into the United States

Ethers, Ethyl Chloride

	Pounds.	Dollars.
1913	11,241	7,903
1914	9,014	10,046
1915	.....	.....
1916	2,780	5,193
1917	8,917	5,207
1918	1,274	2,411
1919	22,495	2,250
1920	877	685
1921	7,009	6,482
1922	13,150	2,757
1923	17,335	19,850
1924	7,187	8,859
1925	15,462	18,146
1926	855	1,088
1927	642	749
1928	132	172

Ethers, Sulphuric

	Pounds.	Dollars.
1891	8	1
1901	109	30
1913	755	120
1914	915	131
1915	849	189
1916	62	23
1917	.....	.....
1918	8	7
1919	282,576	28,259
1920	100	34
1921	.....	.....
1922	988	334
1923	134	27
1924	50	80
1925	72	110
1926	11	22
1927	.....	.....
1928	22	12

Ethers, Containing Not More than 10 Percent Alcohol, N. E. S.

	Pounds.	Dollars.
1921	269	796
1922	2,177	1,068
1923	7,125	4,220
1924	10,683	5,457
1925	46,694	21,175
1926	77,693	41,112
1927	2,717,789	410,897
1928	3,929,410	584,359

Ethers, Containing More than 10 Percent Alcohol, N. E. S.

	Pounds.	Dollars
1901	698	1,119
1914	.....	1,868
1915	66	64
1916	140	169
1917	.....	.....
1918	880	182
1919	.....	.....
1920	.....	.....
1921	240	274
1922	1,316	1,319
1923	50,997	6,055
1924	1,247	1,506
1925	7,192	14,331
1926	1,060	1,132
1927	2	3
1928	51	56

Ethylene, Chlorohydrin, Dichloride, Glycol and Oxide

	Pounds.	Dollars.
1925	25,124	10,934
1926	1,711	831

Stated separately after 1926.

Ethylene Dibromide

	Pounds.	Dollars.
1928	132,205	39,134

Six months, January-June.

Ethylenechlorohydrin

	Pounds.	Dollars.
1927	882	412
1928	.....	.....

Ethyleneglycol

	Pounds.	Dollars.
1927	1,577	429
1928	12	3

Eucalyptol

	Pounds.	Dollars.
1924	3,960	403
1925	120	123
1926	899	331
1927	884	534
1928	1,003	769

Explosives from Coal Tar

	Pounds.	Dollars.
1873	.....	40,119
1881	.....	42,904
1891	.....	.....
1901	31,633	8,554
1913	85,068	18,330
1914	.....	.....
1925	20,091	4,378
1926	.....	.....
1927	.....	.....
1928	.....	.....
1929	3,240,500	294,585
1920	.....	.....
1921	.....	.....
1923	.....	.....
1923	462	1,373
1924	1,518	2,955
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Ferric Chloride (Iron Perchloride)

	Pounds.	Dollars.
1924	114,988	6,644
1925	62,579	3,704
1926	187,388	17,771
1927	528,339	15,484
1928	664,859	18,664

Ferromanganese

	Tons.	Dollars.
1919	24,006	4,120,794
1920	36,975	3,886,745
1921	43,196	6,057,802
1922	31,104	1,877,094
1923	118,435	8,770,834
1924	56,776	4,605,681
1925	69,405	5,902,225
1926	48,197	4,766,798
1927	33,704	2,229,878
1928	49,731	4,780,739

Ferrophosphorus

	*Pounds.	Dollars.
1913	81	3,689
1914	26	1,136
1915	27	1,213
1916	12	617
1917	85	5,458
1918	10	1,055
1919	109,141	3,639
1920	61,665	2,207
1921	14,000	780
1922	11,997	182
1923	.....	.....
1924	.....	.....
1925	4,760	466
1926	99,207	3,377
1927	4,341,132	143,937
1928	3,782,027	126,055

* Quantity stated in tons prior to 1919.

Ferrosilicon

	*Pounds.	Dollars.
1919	6,091	521,142
1920	17,855	891,108
1921	7,361	397,991
1922	10,977	524,356
1923	18,511	1,232,261
1924	25,865,275	1,171,755
1925	11,186,238	451,944
1926	15,818,765	807,329
1927	29,143,719	1,428,030
1928	9,055,982	506,297

*Quantity stated in tons prior to 1924.

Ferrovanadium

	Pounds.	Dollars.
1920	19,189	39,254
1921	.....	.....
1922	.....	.....
1923	1,160	3,770
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	1,058	328
1928	.....	.....

Fertilizers, Tankage

	Tons.	Dollars.
*1925	29,792	914,459
*1926	25,434	959,792
1927	23,286	951,089
1928	42,140	1,185,675

Fertilizers, Not Specially Provided For

	Tons.	Dollars.
1891	14,792	221,467
1901	72,239	640,428
1913	115,257	2,190,816
1914	197,165	4,241,285
1915	100,155	2,208,193
1916	73,252	1,591,517
1917	71,374	1,521,307
1918	63,315	1,772,684
1919	55,775	2,260,253
1920	123,287	4,752,048
1921	113,353	5,434,426
1922	89,667	2,396,817
1923	117,426	3,646,490
1924	110,943	2,338,140
1925	37,429	684,617
1926	154,766	3,154,204
1927	85,607	1,589,187
1928	76,484	1,688,224

Filter Masse or Filter Stock

	Pounds.	Dollars
1914	486,476	53,974
1915	349,496	41,880
1916	54,349	8,356
1917	65,052	10,304
1918	48,210	13,917
1919	6,605	1,097
1920	65,750	9,048
1921	146,282	26,455
1922	109,089	11,792
1923	171,008	18,043
1924	274,358	27,263
1925	203,674	26,348
1926	254,542	40,382
1927	262,516	37,743
1928	374,616	67,904

Filter Tubes

	Number.	Dollars.
1901	.....	6,053
1913	.....	6,038
1914	.....	7,437
1915	.....	6,639
1916	.....	2,769
1917	.....	7,359
1918	.....	3,135
1919	.....	2,481
1920	.....	3,106
1921	.....	2,832
1922	.....	630
1923	.....	698
1924	104,410	2,409
1925	.....	.....
1926	.....	.....
1927	50	144
1928	.....	.....

Filtering Paper

	Pounds.	Dollars
1924	589,088	190,354
1925	527,486	197,600
1926	502,345	206,193
1927	579,820	231,463
1928	539,416	241,735

Fish Sounds, Crude

	Pounds.	Dollars.
1916	396,031	96,201
1917	456,738	104,654
1918	361,248	78,499
1919	150,411	38,876
1920	90,781	9,210
1921	131,136	31,051
1922	38,486	11,242
1923	44,724	8,120
1924	112,292	28,023
1925	147,653	40,067
1926	131,091	40,472
1927	85,152	17,600
1928	51,568	6,972

Flavoring Extracts

	Pounds.	Dollars.
1918	4,938	6,383
1919	3,431	11,293
1920	5,057	9,173
1921	43,625	30,693
1922	671,523	409,930
1923	772,164	387,240

Subdivided after 1923.

Flavoring Extracts Containing No Alcohol

	Pounds.	Dollars
1924	80,607	67,461
1925	83,637	51,731
1926	93,372	57,061
1927	106,414	76,389
1928	79,227	56,973

Flavoring Extracts Containing Alcohol

	Pounds.	Dollars
1924	73,690	38,599
1925	97,025	92,340
1926	126,813	122,426
1927	103,398	134,954
1928	94,053	134,474

Flavors (Coal Tar Product)

	Pounds.	Dollars
1924	11	13
1925	.....	.....
1926	2	33
1927	.....	.....
1928	715	881

Floral Essences and Concretes

	Pounds.	Dollars.
1914	.....	87,086
1915	.....	145,973
1916	.....	265,956
1917	.....	408,936
1918	.....	250,531
1919	.....	84,610
1920	.....	174,097
1921	.....	176,198
1922	.....	186,859
1923	.....	989,811
1924	23,736	1,084,444
1925	39,370	2,251,766
1926	18,382	1,246,744
1927	15,901	1,472,903
1928	11,821	1,217,394

Floral and Flower Waters Containing No Alcohol, N. E. S.

	*Gallons.	Dollars.
1913	.....	31,710
1914	.....	50,297
1915	.....	22,216
1916	.....	34,461
1917	.....	29,279
1918	.....	52,353
1919	.....	274,648
1920	.....	28,992
1921	.....	61,407
1922	.....	24,156
1923	.....	25,056
1924	198,086	18,402
1925	121,905	15,232
1926	129,276	15,088
1927	93,169	16,793
1928	31,348	21,588

* Stated in pounds prior to 1927.

Fluorspar

	Tons.	Dollars
1913	23,786	77,535
1914	13,663	50,943
1915	6,925	27,951
1916	8,908	32,482
1917	12,008	87,880
1918	10,936	117,279
1919	10,367	169,606
1920	11,312	146,151
1921	18,068	219,557
1922	8,661	86,673
1923	14,454	278,443
1924	47,366	567,109
1925	49,175	570,641
1926	44,413	487,600
1927	70,607	698,406
1928	44,716	442,901

Formaldehyde Solution (Formalin)

	Pounds.	Dollars
1914	14,228	1,443
1915	7,700	814
1916	79,857	8,054
1917	23,935	2,349
1918	223,402	40,691
1919	162	71
1920	195,878	92,944
1921	274,000	125,819
1922	45,594	8,246
1923	466	117
1924	.....	.....
1925	9	16
1926	396	431
1927	1,347	90
1928	4,188	194

Fuller's Earth

	Tons.	Dollars.
1911	15,813	125,899
1912	16,175	138,111
1913	16,866	145,588
1914	19,367	174,276

Subdivided after 1914; see below.

Fuller's Earth Unwrought and Unmanuractured

	Tons.	Dollars.
1871	326	3,383
1881	268	3,207
1891	.....	.....
1901	2,653	16,006
1915	745	5,268
1916	1,007	7,825
1917	975	7,846
1918	1,348	14,552
1919	657	7,800
1920	534	6,413
1921	1,222	16,561
1922	394	5,721
1923	850	12,569
1924	284	3,485
1925	219	2,671
1926	213	2,751
1927	216	3,255
1928	462	6,015

Fuller's Earth, Wrought or Manufactured

	Tons.	Dollars.
1901	7,352	55,450
1915	18,754	163,540
1916	14,973	135,845
1917	15,077	159,071
1918	13,435	177,102
1919	13,036	205,219
1920	14,461	199,284
1921	11,015	145,377
1922	8,537	122,261
1923	9,634	142,093
1924	5,901	85,171
1925	6,608	98,420
1926	7,839	120,772
1927	6,607	101,490
1928	5,776	107,182

Fustic

	*Pounds.	Dollars.
1881	8,677	130,490
1891	9,100	132,842
1901	7,140	83,605
1913	3,785	53,303
1914	7,121	100,501
1915	12,354	179,959
1916	17,469	289,913
1917	5,195	142,431
1918	16,259	435,428
1919	4,486	83,006
1920	929	16,567
1921	2,504	36,683
1922	4,390	85,912
1923	4,335	67,249
1924	10,927,089	87,529
1925	5,137,250	42,522
1926	9,622,638	71,030
1927	9,034,854	65,516
1928	6,285,136	48,912

* Quantity stated in tons prior to 1924.

Fustic Extract

	Pounds.	Dollars
1924	112	22
1925	579	170
1926	7,586	2,426
1927	11,220	2,821
1928	.....	.....

Gas Black

	Pounds.	Dollars.
1926	130	8
1927	2,100	210
1928	97	10

Gas Liquor, Ammoniacal

	Pounds.	Dollars
1913	.....	35,245
1914	.....	29,336
1915	.....	31,466
1916	.....	26,733
1917	.....	23,335
1918	.....	5,059
1919	.....	.....
1920	.....	18,672
1921	.....	7,571
1922	.....	35,156
1923	.....	24,819
1924	734,227	20,566
1925	1,561,747	40,563
1926	115,871	4,673
1927	736,125	2,226
1928	10	10

Gelatin, Unmanufactured, Edible

	Pounds.	Dollars.
1871	.....	55,096
1891	533,812	251,833
1901	700,770	303,054
1913	1,085,940	279,802
1914	2,439,440	768,215
1915	2,708,362	916,368
1916	1,657,065	319,173
1917	967,920	309,524
1918	369,115	133,873
1919	183,716	99,068
1920	1,112,569	573,889
1921	2,262,392	1,171,256
1922	2,460,908	959,719
1925	2,600,118	840,499
1924	3,379,917	871,071
1925	3,124,788	664,507
1926	2,757,499	572,987
1927	2,520,883	480,325
1928	1,868,560	398,335

Gelatin, Unmanufactured, Inedible

	Pounds.	Dollars.
1926	911,217	523,503
1927	1,733,401	932,488
1928	1,491,493	833,119

Gentian Root

	Pounds.	Dollars.
1881	102,297	3,393
1891	214,645	5,948
1901	574,219	16,758
1913	1,796,928	93,261
1914	2,181,935	109,119
1915	1,022,252	55,558
1916	788,307	63,340
1917	1,780,044	218,377
1918	382,590	46,616
1919	188,402	25,993
1920	913,343	92,524
1921	1,051,380	78,982
1922	206,656	13,062
1923	663,685	45,766
1924	523,266	31,646
1925	769,119	39,821
1926	595,272	29,834
1927	444,943	24,212
1928	505,253	32,177

Ginger Root, Unground, Not Preserved or Candied

	Pounds.	Dollars.
1901	3,507,680	194,606
1913	7,856,401	406,197
1914	3,006,132	146,792
1915	3,310,391	156,973
1916	5,593,845	391,965
1917	4,307,279	411,965
1918	5,157,581	431,245
1919	2,386,044	212,975
1920	9,068,228	1,205,962
1921	4,649,429	583,362
1922	6,071,760	583,301
1923	5,610,993	614,806
1924	4,248,426	560,291
1925	4,304,720	590,440
1926	3,723,550	382,962
1927	4,361,829	321,808
1928	4,097,669	326,647

Ginger Root, Ground

	Pounds.	Dollars.
1928	1,505	55

Ginseng

	Pounds.	Dollars.
1924	9,484	42,506
1925	10,319	99,517
1926	5,425	45,246
1927	7,982	63,449
1928	10,193	79,270

Gland Extracts, Suprarenal, Thyroid and Other

	Pounds.	Dollars.
1926	.....	150
1927	300	2,917
1928	4	1,103

Glass Sand

	Tons.	Dollars.
1924	610	2,001
1925	6,365	2,622
1926	6,549	5,599
1927	9,102	8,826
1928	9,672	10,980

Glass Bottles, Vials and Jars, Plain Green or Colored, Molded or Pressed, and Flint, Lime, or Lead, Empty

	Pounds.	Dollars.
1913	.....	205,267
1914	.....	214,130
1915	3,561,200	85,668
1916	1,351,813	24,049
1917	850,946	19,231
1918	114,725	5,635
1919	199,869	7,531
1920	485,891	25,503
1921	1,481,864	91,008
1922	1,401,725	67,923

Quantity not stated prior to 1915.
Not stated separately after 1922.

Glass Bottles and Bottle Glassware, Blown in a Mold, or Otherwise

	Pounds.	Dollars.
1919	126,995	32,874
1920	81,665	32,807
1921	183,926	19,065
1922	335,116	34,444
1923	152,065	55,366
1924	150,366	81,331
1925	207,617	128,592
1926	.....	136,906
1927	.....	187,293
1928	.....	146,783

Quantity not stated after 1925.

Glass, Cylinder and Crown, Unpolished, Silvered

	Sq. feet.	Dollars
1914	56,494	3,906
1915	54,393	2,021
1916	12	1
1917	420	45
1918	8,846	1,159
1919	150	15
1920	5,150	911
1921	7,711	1,843
1922	77,367	9,189

Not stated after 1922.

Imports Into the United States

Glass, Cylinder and Crown, Polished, Not Bent or Decorated

	Sq. feet.	Dollars.
1913	579,129	119,395
1914	615,337	121,814
1915	196,274	36,783
1916	108,578	19,898
1917	.....	.....
1918	255	307
1919	.....	.....
1920	15,176	7,697
1921	131,171	108,770
1922	144,215	59,653
1923	760,964	371,412
1924	872,937	425,939
1925	514,490	203,906
1926	614,724	234,984
1927	389,740	170,766
1928	275,422	117,309

Glass, Cylinder and Crown, Polished When Bent or Decorated

	Sq. feet.	Dollars.
1913	247,428	60,269
1914	147,482	36,116
1915	43,385	10,076
1916	5,321	1,353
1917	39	67
1918	.....	.....
1919	.....	.....
1920	668	232
1921	2,961	3,426
1922	2,671	508
1923	31,982	20,583
1924	21,892	9,802
1925	16,796	11,971
1926	22,474	10,396
1927	14,107	4,860
1928	8,270	3,261

Glass, Cylinder and Crown, Polished, Silvered, Not Bent or Decorated

	Sq. feet.	Dollars.
1914	90,657	20,405
1915	89,346	19,597
1916	8,798	1,906
1917	.....	.....
1918	15	15
1919	.....	.....
1920	22,091	8,302
1921	111,357	156,064
1922	131,251	63,318

Not stated separately after 1922.

Glass, Cylinder and Crown, Silvered, Not Bent or Decorated

	Sq. ft.	Dollars.
1923	211,088	111,855
1924	176,293	90,899
1925	177,298	88,680
1926	117,487	58,734
1927	41,926	18,530
1928	39,067	21,599

Glass, Cylinder and Crown, Silvered, Bent or Decorated

	Sq. feet.	Dollars
1920	11,506	6.058
1921	28	35
1922	7,174	4,971
1923	34,465	15,532
1924	17,330	8,407
1925	94,430	38,426
1926	13,756	6,780
1927	3,645	2,980
1928	3,132	2,359

Glass Demijohns and Carboys, Covered or Uncovered, Empty

	Pounds.	Dollars.
1914	.....	3,890
1915	27,990	890
1916	4,731	298
1917	.....	.....
1918	2,528	209
1919	4,905	3,048
1920	250	16
1921	10,858	3,206
1922	24,639	473

Not stated after 1922.

Glass, Plate, Fluted, Rolled, Ribbed or Rough, Containing a Wire Netting

	Sq. feet.	Dollars
1913	379,219	14,812
1914	436,587	15,207
1915	307,516	12,742
1916	69,272	4,526
1917	18,240	2,002
1918	17,656	2,230
1919	6,978	2,458
1920	19,053	3,940
1921	220,674	19,100
1922	293,718	29,388
1923	1,650,868	128,001
1924	2,379,556	707,076
1925	1,462,304	151,712
1926	1,512,227	114,452
1927	1,275,832	104,006
1928	1,002,235	128,139

Glass, Plate—Cast, Polished, Unsilvered

	Sq. feet.	Dollars.
1927	19,747,594	6,417,194
1928	14,180,532	3,399,386

Glass, Plate—Cast, Polished, Unsilvered, Containing a Wire Netting

	Sq. feet.	Dollars.
1913	1,068,427	247,015
1914	2,819,386	631,596
1915	440,718	100,400
1916	12,782	3,778
1917	13,484	13,787
1918	.....	.....
1919	.....	.....
1920	430,253	309,932
1921	3,484,398	3,008,343
1922	4,750,252	2,170,100
1923	3,117,692	1,437,985
1924	116,439	66,568
1925	155,787	77,231
1926	441,748	156,170
1927	246,327	137,678
1928	169,416	33,036

Glass, Plate—Cast, Polished, Unsilvered, When Bent or Decorated, Etc.

	Sq. feet.	Dollars.
1927	158,505	138,949
1928	296,088	163,720

Glass Plate—Cast, Polished, Unsilvered When Bent or Decorated, Etc., Containing a Wire Netting

	Sq. feet.	Dollars.
1913	88,189	47,449
1914	140,806	62,228
1915	27,121	14,531
1916	7,147	2,726
1917	3,334	1,542
1918	.....	.....
1919	273	210
1920	4,236	2,766
1921	28,396	26,663
1922	115,583	62,217
1923	204,314	131,604
1924	1,064	771
1925	4,109	3,023
1926	9,613	9,674
1927	307,127	104,801
1928	14,436	8,788

Glass, Plate—Cast, Polished, Silvered and L. G. Plates, Exceeding in Size 144 Square Inches

	Sq. feet.	Dollars.
1913	832	527
1914	18,229	4,885
1915	2,592	894
1916	2,557	515
1917	35	116
1918	181	82
1919	26	122
1920	6,939	5,459
1921	49,369	38,767
1922	74,312	38,745
1923	110,320	61,317
1924	122,363	39,492
1925	56,145	27,704
1926	97,369	49,859
1927	116,689	48,879
1928	56,791	27,872

Glass, Plate—Cast, Polished, Silvered When Bent or Otherwise Decorated

	Sq. feet.	Dollars.
1913	1,510	1,004
1914	19,859	5,854
1915	6,822	2,152
1916	2,570	2,135
1917	14	35
1918	104	94
1919	.....	.....
1920	66	115
1921	45	85
1922	213	508
1923	17,043	11,505
1924	20,926	16,843
1925	4,458	3,519
1926	8,839	5,328
1927	13,762	8,135
1928	7,935	5,444

Glass, Window

	Pounds.	Dollars.
1871	37,922,875	1,495,170
1881	45,612,593	1,471,914
1891	61,577,799	1,512,703
1901	29,967,415	970,073

Stated in detail for later years.

Glass, Window—Cylinder, Crown, Unpolished

	Pounds.	Dollars.
1913	20,468,971	804,732
1914	31,197,531	1,212,536
1915	16,532,210	679,228
1916	1,401,572	140,262
1917	2,594,979	277,222
1918	572,614	84,018
1919	360,958	25,616
1920	2,448,115	250,649
1921	29,173,325	1,639,579
1922	50,053,037	2,532,986
1923	49,752,402	2,177,748
1924	36,391,925	1,828,966
1925	40,978,427	2,254,345
1926	58,619,467	2,613,578
1927	88,390,861	3,054,253
1928	71,419,934	2,533,915

Glass, Window—Cylinder, Crown and Common, Unpolished When Bent or Decorated

	Pounds.	Dollars.
1913	1,773,023	153,723
1914	1,703,186	149,203
1915	460,017	56,223
1916	339,009	52,051
1917	370,522	47,069
1918	131,139	19,010
1919	159,103	29,829
1920	735,168	97,321
1921	1,060,678	121,594
1922	755,814	79,795
1923	828,142	117,911
1924	1,070,743	138,999
1925	1,770,580	196,290
1926	2,127,708	221,549
1927	2,879,299	254,154
1928	3,320,191	299,022

Glass, Plate, Fluted, Rolled, Ribbed or Rough, Ground, Smoothed or Otherwise Obscured

	Sq. feet.	Dollars.
1913	9,617	2,247
1914	614,012	126,917
1915	4,872	1,074
1916	489	124
1917	5,952	402
1918	3,996	391
1919	.....	.....
1920	46,087	34,754
1921	439,004	317,730
1922	298,170	142,171
1923	15,891,418	8,801,516
1924	24,782,875	15,852,610
1925	15,144,470	6,719,074
1926	19,804,179	7,396,500
1927	8,209	4,961
1928	141,582	30,683

Glauber's Salt

	Tons.	Dollars.
1871	118	2,879
1881	.....	15
1891	108	2,167
1901	305	6,826
1913	240	5,685
1914	228	5,557
1915	53	1,113
1916	1	33
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	1	58
1921	44	710
1922	7,102	80,710
1923	6,943	76,275
1924	6,312	74,952
1925	5,541	71,405
1926	4,387	54,306
1927	2,870	32,657
1928	2,149	26,441

Glazes, Fluxes, Enamels and Colors, Ceramic and Glass

	Pounds.	Dollars.
1914	.....	38,527
1915	.....	70,782
1916	.....	64,138
1917	.....	43,421
1918	.....	26,583
1919	19,046	22,859
1920	45,661	48,090
1921	53,907	60,753
1922	52,627	47,835
1923	150,703	102,213
1924	164,568	107,248

Subdivided after 1924.

Glazes, Fluxes, Enamels and Colors, Ceramic and Glass—Ground or Pulverized

	Pounds.	Dollars.
1925	307,150	107,862
1926	506,743	185,493
1927	345,323	104,305
1928	392,980	105,084

Glazes, Fluxes, Enamels and Colors, Ceramic and Glass—In Other Forms

	Pounds.	Dollars.
1925	106,125	42,515
1926	627,991	208,444
1927	558,794	165,742
1928	407,979	100,986

Glucose

	Pounds.	Dollars
1871	.....	412
1881	.....	107,370
1891	813,491	22,038
1901	94,787	2,317
1913	212,635	7,166
1914	262,223	9,025
1915	52,799	1,880
1916	1,233	313
1917	7,696	331
1918	105,551	6,482
1919	400	40
1920	40,267	3,040
1921	50	5
1922	3,631	142

Not stated after 1922.

Glue, Glue Size and Fish Glue Value Less Than 40c. a Pound

	Pounds.	Dollars.
1871	1,578,239	128,528
1881	1,888,005	243,353
1891	5,451,136	485,595
1901	4,530,390	567,992
1913	5,099,661	672,266
1914	22,545,681	1,792,612
1915	8,086,283	702,350
1916	3,050,794	219,177
1917	6,301,825	954,673
1918	2,013,812	342,017
1919	487,617	141,294
1920	1,422,594	373,616
1921	3,214,400	686,322
1922	4,148,656	557,555
1923	6,804,279	699,231
1924	7,401,007	586,863
1925	3,552,007	327,774
1926	6,450,912	507,540
1927	6,817,802	511,497
1928	9,072,691	725,534

Glue, Glue Size and Fish Glue, Value at 40c. a Pound or More

	Pounds.	Dollars.
1925	16,458	10,429
1926	2,759	2,356
1927	8,652	6,443
1928	2,641	2,158

Glue Stock, Including Hide Cuttings Raw

	Pounds.	Dollars.
1871	.....	123,664
1881	.....	227,131
1891	.....	353,948
1901	.....	1,055,788
1913	.....	1,773,786
1914	.....	2,126,632
1915	.....	1,504,325
1916	.....	970,313
1917	33,631,832	1,451,319
1918	21,415,345	927,923
1919	8,833,386	518,266
1920	26,248,159	1,666,252
1921	36,120,019	2,270,932
1922	25,222,414	1,149,883
1923	29,750,079	1,165,697
1924	28,412,121	1,098,249
1925	29,307,919	1,176,506
1926	38,379,493	1,649,478
1927	46,441,737	1,862,158
1928	43,107,511	1,997,353

Glue, Vegetable

	Pounds.	Dollars.
1924	33,600	2,197
1925	584	74
1926	400	37
1927	168	28
1928	1,427	150

Glycerin, Crude

	Pounds.	Dollars
1871	213,568	34,498
1881	6,669,531	675,334
1891	11,983,796	874,161
1901	19,393,926	1,403,356
1913	34,399,129	4,247,032
1914	36,230,383	4,473,178
1915	18,661,929	2,185,368
1916	10,875,058	2,209,610
1917	4,078,803	1,260,454
1918	1,925,815	830,145
1919	1,163,952	368,680
1920	15,664,109	1,849,998
1921	11,056,067	1,576,018
1922	2,091,117	287,148
1923	12,893,119	1,289,947
1924	9,848,607	927,348
1925	17,259,224	1,948,994
1926	29,942,635	3,204,945
1927	21,361,098	3,383,618
1928	9,070,705	1,164,189

Glycerin, Refined

	Pounds.	Dollars.
1891	446,044	45,771
1901	1,195,580	128,940
1913	432,339	73,336
1914	551,306	90,562
1915	360,567	60,908
1916	803,463	132,469
1917	137,128	76,361
1918	19,750	17,438
1919	162,916	67,597
1920	1,911,278	414,316
1921	3,960,671	850,834
1922	75,953	16,649
1923	500,339	58,150
1924	256,671	31,305
1925	9,444,530	1,159,854
1926	3,953,418	676,130
1927	12,138,865	2,755,870
1928	5,020,660	883,900

Glycol Monoacetate

	Pounds.	Dollars.
1927	2,796	2,638
1928	76,801	8,249

Gold Beaters' Molds and Skins

	Number.	Dollars.
1871	.....	22,632
1881	.....	23,806
1891	.....	39,625
1901	.....	38,556
1913	.....	26,408
1914	.....	26,634
1915	.....	13,944
1916	.....	23,131
1917	.....	38,651
1918	.....	22,609
1919	77,635	9,235
1920	34,239	21,262
1921	22,003	62,918
1922	12,210	41,581
1923	12,366	46,097

Stated separately after 1923.

Gold Beaters' Molds

	Number.	Dollars.
1924	982	50,491
1925	650	47,219
1926	702	62,783
1927	578	52,376
1928	574	52,629

Gold Beaters' Skins

	Number.	Dollars.
1924	56,392	1,410
1925	9,004	604
1926	48,322	3,194
1927	2,950	299
1928	.....	.....

Gold Leaf

	*Leaves (3⅜x3⅜ inches).	Dollars.
1871	161	3,507
1881	451	10,820
1891	167	3,062
1901	115	2,704
1913	30,902	28,283
1914	37,527	32,482
1915	13,614	12,549
1916	1,547	773
1917	14,370	12,463
1918	8,472	6,334
1919	14	10
1920	5,338	3,792
1921	65,999	64,114
1922	53,735	70,962
1923	87,119	106,625
1924	198,287	252,912
1925	11,502,611	142,667
1926	11,303,965	138,449
1927	10,748,490	114,706
1928	3,213,406	34,593

* Quantity stated as 100 leaves prior to 1925.

Grease, Enfleurage

	Pounds.	Dollars.
1891	.....	263,950
1901	137,812	246,869
1913	92,446	124,195
1914	40,638	51,417
1915	28,407	31,578
1916	5,245	8,524
1917	26,636	33,945
1918	23,020	167,861
1919	13,357	196,345
1920	9,720	48,979
1921	19,726	241,958
1922	17,268	228,557
1923	20,472	192,432
1924	12,434	19,209
1925	3,384	10,215
1926	3,657	27,525
1927	9,120	17,986
1928	3,813	21,217

Grease, Marrow, Crude

	Pounds.	Dollars.
1918	44,366	8,774
1919	232,960	17,738
1920	37,511	4,035
1921	60,090	4,513
1922	25,243	801
1923	.....	.....
1924	2,198	111
1925	.....	.....
1926	93,474	3,292
1927	2,358	278
1928	109	25

Grease, Wool, Crude

	Pounds.	Dollars.
1891	7,683,000	191,371
1901	11,627,387	269,648
1913	14,473,551	328,991
1914	12,284,248	292,988
1915	9,281,273	286,705
1916	7,617,713	350,535
1917	4,861,795	294,326
1918	4,481,486	338,877
1919	139,436	17,153
1920	2,366,306	140,999
1921	3,396,285	141,957
1922	6,281,426	149,009
1923	11,311,422	342,637
1924	11,167,852	279,445
1925	8,446,879	240,188
1926	10,255,319	367,962
1927	10,417,378	342,035
1928	7,394,800	204,419

Grease, Wool, Refined

	Pounds.	Dollars.
1913	2,009,018	86,474
1914	2,691,591	121,847
1915	467,761	23,418
1916	214,599	14,794
1917	318,149	24,819
1918	31,218	2,552
1919	1,022	257
1920	44,031	1,504
1921	44,682	4,382
1922	159,528	6,396
1923	926,851	59,643
1924	1,218,880	69,753
1925	852,360	56,743
1926	714,072	44,395
1927	2,027,398	157,270
1928	1,982,994	147,298

Grease and Oils, Sulphur Oil or Olive Foots

	Pounds.	Dollars.
1913	13,698,352	874,114
1914	11,714,795	772,055
1915	12,946,066	885,810
1916	12,684,936	1,055,292
1917	12,138,516	1,108,099
1918	1,712,640	175,814
1919	613,665	116,275
1920	10,409,509	1,603,499
1921	11,010,970	1,260,905
1922	16,034,592	1,080,947

Not stated after 1922.

Imports Into the United States

Greases, Fats and Other Animal Oils Not Containing Alcohol

	Pounds.	Dollars.
1881	253,808	12,809
1891	2,611,262	108,422
1901	5,202,465	238,129
1913	7,384,605	291,984
1914	10,684,016	449,561
1915	17,300,356	709,330
1916	11,324,635	482,479
1917	8,428,689	482,066
1918	26,345,640	2,591,044
1919	27,684,496	2,585,200
1920	29,271,846	3,206,887
1921	20,411,764	1,407,092
1922	18,798,008	910,963
1923	1,378,473	86,180
1924	56,164	3,934
1925	238,007	20,904
1926	228,344	14,797
1927	156,211	11,674
1928	172,308	10,872

Grease and Rendered Oil, N. E. S., Containing Alcohol

	Pounds.	Dollars.
1871	.....	38,420
1881	4,048,028	175,883
1891	4,563,255	93,874
1901	.....	.....
1913	.....	14,207
1914	.....	106,041
915	.....	84,764
1916	.....	81,289
1917	.....	25,713
1918	.....	5,367
1919	333,704	40,349
1920	5,006	986
1921	21,997	2,750
1922	120,713	5,429
1923	2,684	778
1924	50	102
1925	.....	.....
1926	29	7
1927	.....	.....
1928	724	246

Guano

	Tons.	Dollars
1871	94,345	3,313,914
1881	23,452	339,552
1891	11,162	194,167
1901	3,122	23,762
1913	16,462	313,891
1914	21,853	754,727
1915	20,950	584,371
1916	15,732	426,210
1917	3,563	73,304
1918	10,663	306,268
1919	8,218	296,426
1920	18,796	1,550,098
1921	37,578	3,158,064
1922	1,305	45,675
1923	22,858	912,240
1924	22,940	869,304
1925	24,553	737,896
1926	17,855	692,124
1927	20,579	834,447
1928	17,991	778,628

Guiacol and Derivatives

	Pounds.	Dollars.
1914	1,637	2,645
1915	6,907	11,125
1916	469	1,160
1917	200	6,458
1918	9,492	74,818
1919	2,068	40,407
1920	2,870	18,479
1921	3,465	12,951
1922	3,203	8,249
1923	5,906	12,865
1924	2,285	5,678
1925	6,087	9,247
1926	2,193	4,683
1927	43,229	37,308
1928	5,055	6,879

Gum, Amber and Amberoid, Crude

	Pounds.	Dollars.
1871	.....	180
1881	.....	42,400
1891	13,832	46,691
1901	16,947	119,405
1913	35,646	339,984
1914	22,485	117,375
1915	9,856	108,136
1916	443	3,590
1917	36	324
1918	734	1,280
1919	69	731
1920	3,406	12,086
1921	13,088	42,670
1922	4,164	24,789
1923	2,352	18,103
1924	2,246	25,154
1925	3,201	26,061
1926	3,173	25,786
1927	2,890	19,879
1928	1,808	12,646

Gum, Arabic

	Pounds.	Dollars.
1871	12,317,518	1,700,349
1881	3,484,288	389,420
1891	986,760	124,235
1901	2,315,674	241,661
1912	6,586,737	569,631
1913	7,111,254	593,126
1914	2,727,447	182,370

Included in "Arabic or Senegal" after October 3, 1913.

Gum, Arabic or Senegal (Acacia)

	Pounds.	Dollars.
1914	3,492,682	240,066
1915	5,184,265	402,507
1916	7,617,494	679,928
1917	7,473,234	881,346
1918	6,033,341	1,242,281
1919	7,054,939	1,078,864
1920	6,926,635	881,780
1921	5,788,516	614,656
1922	8,894,748	718,553
1923	10,837,751	1,305,346
1924	6,627,005	759,653
1925	7,395,448	758,975
1926	8,552,260	901,092
1927	9,607,031	668,041
1928	9,612,838	787,447

Gum, Asafetida

	Pounds.	Dollars.
1871	90,130	12,789
1881	135,175	12,318
1891	3,424	261
1901	160,998	25,598
1913	134,579	55,868
1914	106,338	27,193
1915	51,727	12,656
1916	115,856	30,126
1917	197,496	52,877
1918	57,398	44,741
1919	48,119	71,261
1920	96,380	211,734
1921	162,008	271,807
1922	5,548	1,405
1923	100,198	30,684
1924	26,494	7,137
1925	31,653	8,427
1926	69,548	14,236
1927	76,493	16,123
1928	112,110	22,713

Gum, Benzoin, Gamboge and Mastic

	Pounds.	Dollars.
1901	23,207	6,418
1913	105,967	41,981
1914	41,975	17,386
1915	106,506	42,940
1916	219,266	73,843
1917	170,950	63,305
1918	186,120	70,501

Mastic shown separately after 1917; Benzoin and Gamboge after 1918.

Gum, Benzoin

	Pounds.	Dollars.
1871	1,631	544
*1881	.....	.....
1891	42,144	16,712
1919	13,265	7,630
1920	18,948	8,068
1921	24,055	9,382
1922	15,323	7,062
1923	72,282	29,150
1924	29,270	15,596
1925	27,893	10,485
1926	58,691	15,625
1927	153,579	61,576
1928	90,172	44,787

* See Copal, Kauri and Dammar.

Gum, Camphor, Crude, Natural

	Pounds.	Dollars.
1871	624,258	92,345
1881	2,055,165	350,508
1891	1,666,074	468,025
1901	2,175,874	738,929
1913	3,477,760	979,355
1914	3,476,908	929,725
1915	3,715,387	998,555
1916	4,674,530	1,268,283
1917	6,605,630	1,991,408
1918	3,638,384	1,451,050
1919	2,622,792	1,189,768
1920	3,961,252	5,496,098
1921	2,045,278	1,847,572
1922	1,667,278	1,057,243
1923	3,477,034	2,213,226
1924	2,137,590	1,300,702
1925	1,905,224	1,012,907
1926	2,616,263	1,503,015
1927	2,041,928	1,054,297
1928	2,839,292	1,124,567

Gum, Camphor, Refined, Natural

	Pounds.	Dollars.
1871	1,974	559
1881	134	38
1891	63	21
1901	77,313	39,507
1913	463,410	153,020
1914	624,508	201,992
1915	1,140,783	406,587
1916	2,304,197	754,498
1917	4,533,918	2,063,177
1918	1,145,244	800,318
1919	1,497,159	1,889,482
1920	1,367,263	2,848,755
1921	801,529	1,150,006
1922	1,596,757	1,196,809
1923	2,176,667	2,286,812
1924	2,659,071	1,874,509
1925	1,728,367	1,013,963
1926	1,193,641	778,471
1927	1,289,118	815,057
1928	1,211,291	612,192

Gum, Camphor, Synthetic

	Pounds.	Dollars.
1915	16	3
1916	.....	.....
1917	460	174
1918	.....	.....
1919	.....	.....
1920	116,100	229,238
1921	123,686	28,060
1922	.....	.....
1923	293,933	182,494
1924	460,734	276,509
1925	1,347,208	682,329
1926	2,396,082	1,277,901
1927	2,759,027	1,337,850
1928	2,349,791	933,105

Gum, Chicle

	Pounds.	Dollars.
1911	5,368,566	2,551,344
1912	5,266,285	2,433,924
1913	6,920,416	3,059,116
1914	7,998,187	2,902,454

Stated separately after 1914.

Gum, Chicle, Crude

	Pounds.	Dollars.
1901	1,756,057	380,410
1914	1,080,665	389,717
1915	2,465,400	889,812
1916	2,728,159	915,317
1917	4,435,149	1,467,917
1918	4,580,501	2,076,148
1919	6,583,276	3,669,679
1920	6,959,169	4,838,836
1921	6,808,317	4,391,872
1922	7,015,797	3,836,141
1923	7,451,716	4,017,354
1924	9,513,793	4,861,453
1925	9,440,701	5,760,671
1926	9,631,051	4,744,386
1927	7,985,369	4,130,436
1928	9,814,926	5,067,019

Gum, Chicle, Refined

	Pounds.	Dollars.
1914	472,766	214,267
1915	1,934,760	962,889
1916	2,302,186	1,283,800
1917	3,935,093	2,371,834
1918	2,028,367	1,473,992
1919	529,166	564,270
1920	448,219	550,828
1921	162,895	249,973
1922	4,464	6,806
1923	15,615	16,935
1924	580	169
1925	140	79
1926	93	85
1927	.....	.....
1928	393	312

Gum, Copal, Kauri and Dammar

	Pounds.	Dollars.
1871	1,466,750	186,998
†1881	15,140,050	2,343,736
1891	15,245,524	1,637,677
1901	18,325,248	1,944,056
1912	24,824,399	2,017,737
1913	31,513,330	2,828,840
1914	9,207,797	989,808

† 1881 includes Benzoin, Gamboge, Mastic and Shellac.
Stated separately after 1914.

Gum, Copal and Other Varnish Gums, N. E. S.

	Pounds.	Dollars.
1914	13,005,925	963,002
1915	12,528,887	813,985
1916	24,100,156	1,440,238
1917	25,621,685	1,583,070
1918	16,590,609	1,147,004
1919	18,921,007	4,001,022
1920	26,417,439	2,614,072
1921	32,188,188	4,145,167
1922	15,090,828	1,124,758
1923	32,133,896	2,267,282
1924	23,422,723	1,820,861
1925	22,025,959	1,705,808
1926	33,294,915	2,786,582
1927	37,631,207	2,968,214
1928	33,823,666	2,513,296

Gum, Dammar

	Pounds.	Dollars.
1914	3,854,698	337,245
1915	5,388,644	563,056
1916	10,819,590	790,776
1917	9,200,064	797,115
1918	5,942,538	689,308
1919	4,270,960	528,458
1920	9,637,963	1,548,004
1921	5,710,548	1,249,864
1922	5,478,880	620,599
1923	12,479,672	1,687,050
1924	8,746,290	1,099,997
1925	12,103,826	1,416,907
1926	13,415,772	1,775,201
1927	15,196,318	2,254,891
1928	14,947,671	2,007,249

Gum, Dextrin, Etc.

	Pounds.	Dollars.
1871	.....	10,072
1881	849,892	49,982
1891	6,228,352	212,968
1901	5,692,395	164,120
1913	5,096,891	180,296
1914	6,684,556	213,301

Not stated as such after 1914.

Gum, Dextrin, Dextrin Substitutes, Burnt Starch or British Gum

	Pounds.	Dollars.
1914	471,491	18,180
1915	274,668	12,028
1916	154,882	10,049
1917	32,773	2,855
1918	505	50
1919	.....	.....
1920	77,238	6,764
1921	238,767	13,954
1922	302,022	15,932
1923	137,158	6,018
1924	110,537	4,161
1925	49,282	2,277
1926	97,632	8,451
1927	7,405	797
1928	697,234	34,378

Gum, Dragon's Blood

	Pounds.	Dollars.
1871	.....	1,371
1881	.....	2,977
1891	2,088	541
1901	22,678	9,190
1913	14,553	5,916
1914	26,283	9,407
1915	23,110	8,446
1916	20,218	10,602
1917	48,026	19,137
1918	10,387	6,193
1919	24,064	10,121
1920	20,827	16,774
1921	90,508	11,755
1922	9,477	4,334
1923	43,916	14,211
1924	40,022	20,798
1925	48,077	28,070
1926	26,212	13,461
1927	75,314	34,000
1928	28,808	14,073

Gum, Fir or Canada

	Pounds.	Dollars.
1871	.....	3,227
1881	.....	.....
1891	34,318	6,858

Not stated after 1891.

Gum, Gambier or Terra Japonica

	Pounds.	Dollars
1871	11,165,119	252,593
1881	38,629,547	1,688,394
1891	27,610,924	1,343,604
1901	26,811,197	824,444
1913	11,981,805	784,931
1914	16,449,663	635,855
1915	14,169,250	542,200
1916	12,602,251	888,985
1917	10,861,904	853,675
1918	8,956,082	953,000
1919	5,909,382	654,211
1920	10,207,018	852,663
1921	6,292,780	432,258
1922	9,817,593	391,482
1923	7,727,170	459,982
1924	4,740,030	378,013
1925	5,146,377	657,358
1926	3,369,282	377,190
1927	3,892,265	312,737
1928	4,778,540	297,686

Gum, Gamboge

	Pounds.	Dollars.
1919	18,153	23,452
1920	470,739	117,560
1921	3,025	3,798
1922	4,904	4,895

Not stated after 1922.

Gum, Kadaya and Talka

	Pounds.	Dollars.
1924	1,124,324	86,338
1925	1,104,785	80,777
1926	1,899,899	184,035
1927	2,361,370	242,280
1928	3,488,113	319,136

Gum, Kauri

	Pounds.	Dollars.
1914	6,554,887	1,097,989
1915	9,530,267	1,444,315
1916	9,958,953	1,394,527
1917	6,667,474	1,018,582
1918	5,867,216	1,029,036
1919	4,703,810	713,001
1920	8,424,661	1,152,075
1921	6,718,182	1,197,262
1922	6,623,811	1,221,442
1923	9,999,534	2,188,144
1924	7,712,927	1,518,668
1925	5,205,842	944,453
1926	4,574,920	832,011
1927	4,577,797	725,343
1928	4,461,920	595,331

Gum, Lac, Crude, Seed, Button and Stick

	Pounds.	Dollars.
1871	73,758	10,647
1881	194,709	52,760
1891	795,757	127,547
1901	57,992	7,382
1913	293,010	36,832
1914	992,425	143,222
1915	1,126,167	88,298
1916	3,485,975	291,176
1917	5,473,174	687,846
1918	1,715,791	312,584
1919	833,784	183,220
1920	2,424,930	728,417
1921	1,806,726	646,407
1922	1,805,298	241,536
1923	6,581,125	1,471,459
1924	4,357,836	1,460,848
1925	9,596,088	3,584,986
1926	10,242,717	3,162,098
1927	15,183,906	4,055,389
1928	8,823,062	2,954,850

Gum, Mastic

	Pounds.	Dollars.
1918	63,545	9,075
1919	10,281	4,232
1920	20,796	12,399
1921	10,954	5,391
1922	42,895	16,266
1923	32,011	11,819
1924	32,019	15,407
1925	28,591	13,860
1926	33,888	14,882
1927	47,235	22,248
1928	34,720	16,483

Gum, Myrrh

	Pounds.	Dollars.
1924	33,128	6,673
1925	16,408	3,485
1926	50,809	9,830
1927	26,821	4,228
1928	93,506	17,093

Gum, Rosin, Crude

	Pounds.	Dollars.
1913	299,988	12,606
1914	2,742,083	58,684
1915	1,505,790	42,085
1916	5,571,325	146,250
1917	129,848	3,380
1918	54,334	2,849
1919	251,858	11,064
1920	141,935	7,223
1921	1,906	126
1922	29,943	1,166
1923	494,490	20,455
1924	591,512	21,801
1925	841,068	33,361
1926	13,027,148	689,964
1927	9,376,568	176,842
1928	1,040,699	40,417

Gum, Sandarac

	Pounds.	Dollars.
1924	147,230	29,151
1925	92,310	23,354
1926	148,214	46,554
1927	193,797	38,538
1928	98,357	20,532

Gum, Senegal

	Pounds.	Dollars.
1901	1,107,763	130,959
1913	172,528	16,254
*1914	140,097	10,609

*Included in "Arabic or Senegal" after October 3, 1913.

Gum, Shellac

	Pounds.	Dollars.
1871	423,537	70,757
*1881	.....	.....
1891	6,290,226	1,078,584
1901	9,617,598	1,278,297
1913	22,069,610	3,046,750
1914	16,824,120	2,686,480
1915	24,308,145	3,018,296
1916	25,927,558	3,801,378
1917	32,847,434	7,709,228
1918	22,841,360	9,514,651
1919	14,268,653	6,462,754
1920	34,151,209	22,178,484
1921	23,871,866	16,634,073
1922	30,767,666	15,656,900
1923	32,775,178	20,084,540
1924	28,511,576	15,170,791
1925	21,436,333	11,433,671
1926	26,187,531	11,493,573
1927	28,706,099	8,846,496
1928	23,012,490	10,365,553

* See Copal, Kauri and Dammar.

Gum, Spruce

	Pounds.	Dollars.
1918	274	204
1919	509	458
1920	789	752
1921	1,397	2,519
1922	2,664	4,069
1923	58	77
1924	3,581	646
1925	9,202	4,140
1926	1,971	1,478
1927	2,610	1,007
1928	4,416	1,857

Gum, Tragacanth

	Pounds.	Dollars.
1881	315,918	127,312
1891	717,404	211,183
1901	1,071,367	365,737
1913	1,401,721	463,800
1914	1,301,545	460,364
1915	1,025,081	355,119
1916	1,129,704	590,128
1917	473,556	320,751
1918	525,445	279,284
1919	785,725	909,652
1920	1,519,386	1,788,079
1921	324,619	484,605
1922	665,817	398,786
1923	1,202,962	586,697
1924	947,985	354,257
1925	696,856	261,922
1926	1,422,859	720,104
1927	1,459,300	740,541
1928	1,769,514	940,705

Gum, Tragasol

	Pounds.	Dollars.
1913	1,028,804	23,998
1914	913,077	20,310
1915	761,390	16,295
1916	931,503	21,587
1917	882,914	21,663
1918	503,045	22,237
1919	662,762	40,006
1920	567,550	27,406
1921	606,184	21,766
1922	734,295	26,720
1923	1,095,765	43,705
1924	798,477	38,499
1925	1,207,853	47,880
1926	975,356	49,294
1927	1,235,474	47,040
1928	1,443,065	68,026

Imports Into the United States

Gums and Resins, in a Crude State, Not Elsewhere Shown

	Pounds.	Dollars.
1881	.....	244,577
1891	.....	1,621,530
1901	.....	87,537
1913	2,704,615	216,886
1914	3,733,839	239,824
1915	4,088,233	255,469
1916	4,963,037	258,537
1917	3,126,764	248,700
1918	5,273,222	625,960
1919	3,232,094	630,683
1920	6,866,439	1,093,332
1921	6,183,215	670,635
1922	7,505,216	532,226
1923	6,751,977	865,575
1924	4,853,982	496,519
1925	5,878,775	633,130
1926	7,611,090	777,545
1927	4,916,059	616,372
1928	3,846,431	649,273

Hellebore

	Pounds.	Dollars.
1924	152,925	9,889
1925	30,776	1,336
1926	29,929	1,361
1927	73,177	3,119
1928	696,467	54,033

Hemlock Bark Extract for Tanning,

	Pounds.	Dollars.
1871	.....	3,256
1881	.....	4,021
1891	768,710	14,958
*1901	3,424,390	101,840
1915	5,263,296	173,998
1916	5,577,989	390,287
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	117,113	4,712
1922	320,569	12,194
1923	79,145	2,887
1924	.....	.....
1925	.....	.....
1926	100	23
1927	.....	.....
1928	30	4

*1901 includes "Quebracho extract."

Henbane

	Pounds.	Dollars.
1924	77,922	13,272
1925	72,746	11,128
1926	101,006	12,164
1927	114,881	10,744
1928	128,923	16,100

Hexamethylenetetramine

	Pounds.	Dollars.
1925	10,549	7,036
1926	21,763	9,261
1927	14,661	6,557
1928	7,764	2,827

Hoarhound

	Pounds.	Dollars.
1924	94,886	5,508
1925	34,290	1,972
1926	58,068	3,283
1927	78,477	3,894
1928	82,013	3,670

Honey

	*Pounds.	Dollars
1871	85,358	53,120
1881	51,158	29,542
1891	21,392	9,570
1901	129,136	58,688
1913	113,792	64,718
1914	49,163	30,291
1915	268,912	107,172
1916	124,268	55,592
1917	277,345	171,616
1918	159,339	213,006
1919	99,657	151,102
1920	764,244	1,019,250
1921	388,262	469,037
1922	187,441	107,740
1923	70,235	61,547
1924	272,389	31,042
1925	263,845	32,073
1926	166,260	33,529
1927	169,452	34,361
1928	112,217	23,467

* Quantity stated in gallons prior to 1924.

Hoofs, Horns, Horn Strips, and Tips

	Pounds.	Dollars.
1871	.....	15,264
1881	.....	398,211
1891	.....	587,643
1901	.....	311,924
1913	.....	320,192
1914	.....	254,872
1915	.....	156,126
1916	.....	110,169
1917	.....	171,718
1918	.....	357,399
1919	1,928,384	106,179
1920	4,894,749	292,353
1921	9,424,775	412,931
1922	2,158,131	140,782
1923	4,373,049	334,903
1924	3,087,550	241,161
1925	1,368,649	141,761
1926	1,120,177	98,697
1927	619,209	74,593
1928	1,077,754	64,215

Hop Extract and Lupulin

		Dollars.
1901	.....	2,806
1913	.....	34,338
1914	.....	49,451
1915	.....	24,407
1916	.....	3,805
1917	.....	1,759
1918	.....	174
1919	.....	19
1920	.....	20,503
1921	.....	17,690
1922	.....	6,892
1923	.....	4,922

"Hop Extract" not stated after 1923. See "Lupulin."

Hops

	Pounds.	Dollars.
1871	100,884	12,811
1881	475,428	111,908
1891	3,780,264	1,706,824
1901	2,489,060	827,943
1913	8,471,770	2,846,209
1914	5,360,743	2,775,882
1915	11,710,534	2,758,844
1916	604,284	147,926
1917	212,029	54,703
1918	112,811	61,201
1919	6	14
1920	1,866,641	1,078,556
1921	3,714,536	2,073,574
1922	822,291	343,658
1923	1,266,308	254,862
1924	558,698	183,794
1925	435,129	189,597
1926	449,027	256,492
1927	427,040	280,448
1928	652,848	290,983

Hydrogen Peroxide or Dioxide

	Pounds.	Dollars.
1927	748,184	130,070
1928	75,296	13,620

Hyoscyamine and Its Salts

	Ounces.	Dollars.
1924	28	458
1925	.....	.....

Not stated after 1925.

Ichthyol

	Pounds.	Dollars.
1901	23,619	33,421
1913	44,347	61,796
1914	66,957	92,485
1915	51,847	70,664
1916	69,227	59,470
1917	91,884	60,757
1918	65,982	43,541
1919	19,623	9,830
1920	98,870	91,927
1921	54,309	31,616
1922	107,119	140,314
1923	17,763	20,407
1924	20	15
1925	9,520	17,157
1926	21,866	25,464
1927	37,609	51,062
1928	40,096	50,015

Incense

	Pounds.	Dollars.
1901	.....	702
1913	.....	14,637
1914	.....	24,382
1915	.....	4,328
1916	.....	5,431
1917	.....	9,968
1918	.....	12,951
1919	.....	32,446
1920	.....	84,877
1921	.....	102,850
1922	.....	62,040
1923	.....	80,180
1924	262,589	100,636
1925	318,040	199,953
1926	247,017	86,015
1927	273,783	72,840
1928	214,339	70,654

India Rubber and Substitutes for, Crude—Balata

	Pounds.	Dollars.
1901	7,635	1,987
1913	1,318,598	706,772
1914	1,525,351	789,261
1915	2,473,228	963,384
1916	2,549,303	997,827
1917	3,284,533	1,647,906
1918	2,468,403	1,285,869
1919	1,238,852	593,633
1920	2,013,737	1,278,551
1920	1,979,990	1,043,567
1922	1,867,477	1,063,056
1923	1,755,857	979,880
1924	1,334,510	731,691
1925	873,078	446,629
1926	1,195,374	579,412
1927	1,039,976	404,496
1928	1,192,035	412,167

India Rubber and Substitutes for, Crude—Guayule Gum

	Pounds.	Dollars.
1913	10,504,945	4,354,400
1914	1,475,804	607,076
1915	5,116,165	1,442,464
1916	2,826,960	881,028
1917	2,872,372	764,484
1918	3,242,340	1,037,030
1919	2,990,253	761,060
1920	1,314,913	278,175
1920	995,123	197,058
1922	285,200	57,040
1923	1,055,459	226,048
1924	2,784,864	740,029
1925	5,148,958	920,391
1926	10,670,951	2,756,136
1927	9,632,227	2,347,169
1928	12,129,723	2,984,535

India Rubber and Substitutes for, Crude—Jelutong, or Pontianak

	Pounds.	Dollars.
1901	9,435,740	257,322
1913	45,444,282	2,197,948
1914	24,224,955	1,175,335
1915	14,765,765	704,613
1916	28,381,105	1,347,176
1917	23,738,004	1,058,577
1918	16,109,009	969,144
1919	11,363,283	1,199,216
1920	18,402,162	2,432,883
1921	6,774,189	1,075,771
1922	5,732,265	453,245
1923	8,712,813	702,485
1924	11,076,841	1,015,531
1925	14,394,748	1,380,198
1926	15,141,782	2,331,553
1927	16,792,248	2,925,063
1928	16,431,376	2,322,055

India Rubber, Milk of, or Latex

	Pounds.	Dollars.
1925	6,887,869	1,647,611
1926	9,400,462	6,130,366
1927	3,538,312	1,465,663
1928	5,185,221	1,728,577

Indigo, Carmined

	Pounds.	Dollars.
1881	.....	329
1891	28,175	33,145
1901	11,061	9,789
1912	9,047	5,903
1913	16,329	9,986
1914	2,130	1,333

Not stated after October 3, 1913.

Indigo, Crude, Natural or Synthetic

	Pounds.	Dollars.
1913	7,712,488	1,102,893
1914	8,252,528	1,115,128
1915	7,983,112	1,604,767
1916	6,794,518	8,451,501
1917	*545,105	960,088

* Figures cover period July 1 to September 8, 1916; stated separately afterward.

Indigo, Natural

	Pounds.	Dollars.
1871	2,101,867	2,115,914
1881	1,699,754	1,541,664
1891	3,999,644	1,692,299
1901	3,139,063	1,402,894
1917	1,231,986	2,449,361
1918	2,141,382	3,261,978
1919	794,251	961,610
1920	154,843	206,119
1921	61,967	121,830
1922	36,007	76,176
1923	10,527	11,709
1924	10,244	4,715
1925	4,677	4,830
1926	.....	.....
1927	2,148	1,373
1928	4,970	1,854

Indigo, Synthetic

	Pounds.	Dollars.
1917	886,700	559,156
1918	942,946	553,246
1919	358,867	197,176
1920	520,347	351,440
1921	99,809	107,084
1922	101,683	187,925
1923	27,750	35,200
1924	356	117
1925	2,116	948
1926	1,589	280
1927	590	610
1928	.....	.....

Indigo Colors, Dyes, Color Acids, Etc.

	Pounds.	Dollars.
1924	4,988	6,228
1925	4,777	4,296
1926	14,423	22,599
1927	8,220	9,786
1928	.....	.....

Indigo Dyes

		Dollars.
1914	.....	34,342
1915	.....	76,258
1916	.....	155,254
1917	.....	147,744

Stated as "Indigoids, etc." after 1917.

Indigo Extracts or Pastes

	Pounds.	Dollars.
1871	.....	40,423
1881	1,540,185	141,163
1891	881,969	58,289
1901	181,168	12,292
1912	223,687	45,984
1913	242,998	43,417
1914	11,998	2,540

Not stated after October 3, 1913.

Indigoids Obtained from Indigo or Otherwise

	Pounds.	Dollars.
1918	13,037	40,984
1919	4,236	9,378
1920	70,461	177,736
1921	67,269	110,596
1922	187,156	228,822
1923	64,399	111,270

Stated as "Indigo colors, dyes, etc.," after 1923.

Ink Powder (Coal Tar Product)

	Pounds.	Dollars.
1924	98	72
1925	.....	.....
1926	100	172
1927	30	8
1928	.....	.....

Ink, Printing and Lithographic

	Pounds.	Dollars.
1901	.....	13,392
1913	.....	7,820
1914	.....	24,999
1915	.....	15,022
1916	.....	17,884
1917	.....	19,026
1918	.....	4,685
1919	.....	655
1920	.....	7,214
1921	.....	12,319
1922	.....	4,997
1923	.....	14,403
1924	13,463	6,960
1925	96,291	21,656
1926	37,282	12,001
1927	61,410	16,273
1928	85,206	19,169

Ink, Writing and Copying

	Pounds.	Dollars.
1913	.....	28,518
1914	.....	18,941
1915	.....	22,765
1916	.....	21,931
1917	.....	26,400
1918	.....	11,962
1919	.....	15,615
1920	.....	14,846
1921	.....	10,584
1922	.....	7,424
1923	.....	6,087
1924	35,139	7,634
1925	19,547	3,457
1926	31,435	6,063
1927	24,121	5,347
1928	31,558	9,694

Ink, All Other, Including Ink Powders (Except Coal Tar)

	Pounds.	Dollars.
1871	.....	85,823
1881	.....	151,358
1891	.....	116,354
1901	.....	61,653
1913	.....	4,918
1914	.....	6,931
1915	.....	6,196
1916	.....	3,481
1917	.....	5,095
1918	.....	8,529
1919	.....	7,129
1920	.....	8,400
1921	.....	14,875
1922	.....	7,226
1923	.....	11,934
1924	77,930	22,431
1925	94,860	174,102
1926	72,650	19,118
1927	56,853	17,193
1928	58,359	19,872

Iodine, Crude

	Pounds.	Dollars.
1871	74,320	212,195
1881	162,863	336,998
1891	241,186	582,009
1901	262,052	658,492
1913	251,256	739,784
1914	230,301	538,447
1915	631,510	1,284,395
1916	1,044,535	2,447,764
1917	1,726,906	4,381,317
1918	256,221	536,799
1919	1,212,290	2,443,509
1920	520,443	927,269
1921	592,758	1,291,669
1922	384,141	968,953
1923	342,206	1,067,491
1924	55,974	137,806
1925	.....	.....
1926	651,097	2,236,937
1927	766,560	2,240,291
1928	827,074	2,799,848

Iodine, Resublimed

	Pounds.	Dollars.
1871	956	3,499
1881	13	30
1891	35	106
1901	22	21
1913	40	96
1914	57	205
1915	3	7
1916	.....	.....
1917	2,610	9,088
1918	15,450	41,735
1919	6,526	22,657
1920	2,870	10,160
1921	2,300	8,051
1922	1,500	4,730
1923	24	45
1924	.....	.....
1925	.....	.....
1926	1	6
1927	.....	.....
1928	.....	.....

Iodoform

	Pounds.	Dollars.
1901	21	36
1913	16	57
1914	884	301
1915	10	40
1916	.....	.....
1917	.....	.....
1918	1	4
1919	.....	.....
1920	.....	.....
1921	7	27
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	.....	.....

Not stated after 1925.

Ipecac, Crude

	Pounds.	Dollars.
1871	22,460	25,232
1881	39,385	41,372
1891	30,484	50,505
1901	52,143	112,465
1913	54,648	86,113
1914	78,954	110,316
1915	137,927	248,408
1916	203,734	484,828
1917	84,672	146,505
1918	60,972	122,281
1919	171,944	378,542
1920	94,429	211,631
1921	83,316	186,998
1922	40,854	44,377
1923	65,875	81,625
1924	78,200	106,117
1025	75,145	113,440
1926	43,238	103,374
1927	99,408	295,572
1928	65,640	180,547

Iridium

	Ounces, troy.	Dollars.
1881	.....	1,730
1891	.....	333
1901	.....	6,072
1913	5,341	348,333
1914	2,185	154,842
1915	3,801	220,823
1916	2,496	146,055
1917	3,899	355,206
1918	2,815	307,954
1919	3,678	503,047
1920	4,969	846,462
1921	3,282	641,349
1922	789	74,188
1923	1,812	336,843
1924	1,685	282,863
1925	1,517	255,710
1926	2,868	609,190
1927	4,875	563,217
1928	3,411	440,363

Iron Alum

	Pounds.	Dollars.
1927	661	65
1928	.....	.....

Iron Sulphide

	Pounds.	Dollars.
1924	2,618	457
1925	16,412	926
1926	23,567	1,566
1927	17,842	902
1928	8,449	296

Isinglass and Prepared Fish Sounds

	Pounds.	Dollars.
1871	.....	6,449
1881	326,801	243,239
1891	18,222	17,976
1901	5,608	12,341
1913	225,165	72,540
1914	146,364	56,433
1915	11,906	9,008
1916	13,750	14,498
1917	35,723	35,476
1918	31,490	23,339
1919	16,764	11,806
1920	26,844	29,341
1921	20,972	15,515
1922	15,273	12,416
1923	79,688	76,261

See "Casein Glue, Isinglass and Other Fish Sounds, Prepared," after 1923.

Jaborandi

	Pounds.	Dollars.
1924	7,354	617
1925	.....	.....
1926	.....	.....
1927	2,956	247
1928	2,631	237

Jalap, Crude

	Pounds.	Dollars
1871	46,135	29,088
1881	76,986	12,256
1891	92,107	24,141
1901	195,850	15,598
1913	227,275	44,632
1914	208,901	23,942
1915	176,047	18,485
1916	201,388	13,642
1917	168,639	14,315
1918	126,511	34,238
1919	95,103	40,667
1920	193,813	104,902
1921	62,148	22,290
1922	60,474	7,207
1923	181,727	28,376
1924	127,665	37,290
1925	122,851	34,476
1926	101,422	24,236
1927	157,883	30,478
1928	85,795	18,919

Joss Sticks, or Joss Light

		Dollars.
1891	.....	1,307
1901	.....	9,706
1913	.....	13,851
1914	.....	6,888
1915	.....	21 720
1916	.....	36,968
1917	.....	36,115
1918	.....	30,660
1919	.....	26,996
1920	.....	36,137
1921	.....	25,056
1922	.....	46,986
1923	.....	39,782
1924	.....	31,517
1925	.....	32,620
1926	.....	25,264
1927	.....	22,713
1928	.....	27,476

Imports Into the United States

Kainit

	Tons.	Dollars.
1891	85,877	605,309
1901	187,470	1,235,124
1913	366,184	2,149,689
1914	526,112	2,579,619
1915	79,124	444,996
1916	64	1,795
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	272,048	5,599,980
1921	204,834	4,782,974
1922	83,571	585,338
1923	173,853	1,133,576
1924	181,287	1,080,132
1925	144,642	865,201
1926	190,955	1,252,942
1927	147,203	1,058,858
1928	107,835	881,688

Kelp

	Pounds.	Dollars.
1901	.....	13
1913	.....	4
1914	.....	350
1915	.....	.....
1916	.....	67
1917	.....	50
1919	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	36
1922	.....	.....
1923	2,500	275
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	4,625	617

Kieserite

	Pounds.	Dollars.
1924	3,369,034	12,387
1925	1,336,679	4,562
1926	201,027	1,039
1927	1,000,945	4,410
1928	50,000	362

Lac Dye

	Pounds.	Dollars.
1871	128,938	21,069
1881	194,623	39,064
1891	.. ...	.....
1901	4,922	671
1913	.....	.....
1914	.....	.....
1915	.....	.....
1916	89,600	13,804
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	398,028	54,849
1921	680	135
1922	.....	.....

Not stated after 1922.

Lactarene

(See Casein)

Lakes From Coal Tar

	Pounds.	Dollars.
1926	800	811
1927	500	835
1928	155	169

Lakes, Dry or in Pulp, Not Specially Provided For

	Pounds.	Dollars.
1914	.....	59,603
1915	.....	153,430
1916	.....	29,839
1917	.....	11,230
1918	.....	8,301
1919	600	1,307
1920	8,901	7,870
1921	9,798	6,533
1922	169,895	9,234
1923	6,091	7,822
1924	3,016	2,833
1925	263	760

Not stated after 1925.

Lamp Black

	Pounds.	Dollars.
1924	751,396	59,436
1925	836,629	54,984
1926	1,120,160	74,627
1927	412,304	28,796
1928	486,296	32,450

Lard

	Pounds.	Dollars.
1871	9,565	1,478
1881	1,655	225
1891	1,795	187
1901	3,084	290
1913	4,117	496
1914	1,251	169
1924	11,406	1,707
1925	41,433	8,198
1926	3,519	591
*1927	84,197	9,401
1928	4,970	827

Included in next class 1915 to 1923 incl.
* Including 79,361 pounds ($8,600) from the Philippines.

Lard Compounds and Lard Substitutes

	Pounds.	Dollars.
1914	124,385	13,665
1915	729,792	79,632
1916	2,405	289
1917	66,682	7,522
1918	1,131,998	266,806
1919	3,191,726	870,361
1920	746,073	192,918
1921	4,988	1,146
1922	3,263	497
1923	8,443	912
1924	5,221	837
1925	104,642	13,364
1926	5,516	887
*1927	371,837	43,681
1928	231,421	26,032

* Including 367,945 pounds ($42,965) from the Philippines.

Lavender Flowers

	Pounds.	Dollars.
1924	52,090	16,556
1925	21,003	4,622
1926	32,161	7,236
1927	52,462	13,933
1928	48,501	12,744

Lead Acetate, Brown, Gray or Yellow

	Pounds.	Dollars.
1871	1,827	198
1891	.....	.....
1901	11	4
1913	42	8
1914	17,477	957
1915	.....	.....
1916	124	17
1917	225	97
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	3,854	306
1922	5,123	346
1923	11,023	768
1924	44,299	3,459
1925	11,038	896
1926	11,365	957
1927	16,928	1,340
1928	10,097	821

Lead Acetate, White

	Pounds	Dollars.
1881	34	5
1891	13,279	707
1901	1,500	99
1913	21,599	1,177
1914	110,936	10,768
1915	31,096	1,809
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	220	212
1920	14	7
1921	6,361	549
1922	83,712	6,378
1923	70,297	5,010
1924	153,307	12,798
1925	163,142	15,995
1926	163,707	14,983
1927	303,687	29,390
1928	119,706	9,177

Lead Arsenate

	Pounds.	Dollars.
1924	3,611	534
1925	310	26
1926	10,157	1,488
1927	.. ...	.....
1928	.....	.....

Lead Nitrate

	Pounds.	Dollars.
1871	513,280	35,358
1881	179,261	10,651
1891	639	46
1901	24,260	1,231
1913	11,305	605
1914	11,312	712
1915	.....	.....
1916	2,205	280
1917	224	22
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	7,746	530
1923	89,073	4,614
1924	11,334	914
1925	28,532	2,440
1926	41,489	3,481
1927	92,220	9,607
1928	52,101	4,828

Lead Compounds, Not Elsewhere Specified

	Pounds.	Dollars.
1914	102,899	9,348
1915	86,514	7,471
1916	39,823	3,644
1917	32,887	3,069
1918	4,510	242
1919	2,408	321
1920	5,591	958
1921	13,224	2,102
1922	3,481	683
1923	14,013	1,951
1924	26,978	3,412
1925	25,489	2,826
1926	19,907	2,998
1927	70,274	9,812
1928	12,907	1,932

Lead Pigments, N. E. S.

	Pounds.	Dollars.
1921	35,227	2,860
1922	1,489	467
1923	14,050	1,099
1924	27,615	3,883
1925	1,458	312
1926	23,719	3,460
1927	30,836	2,155
1928	32,025	2,449

Lead, Pigs and Bars, Old Refuse Run Into Bars, Etc.

	Pounds.	Dollars.
1871	91,496,716	3,721,066
1881	4,322,068	159,129
1891	19,772,642	615,716
1901	.....	.....
1913	6,905,760	147,838
1914	1,309,204	36,307
1915	951,999	31,385
1916	1,794,889	90,815
1917	6,369,189	328,951
1918	345,861	16,155
1919	2,313,652	103,837
1920	15,242,621	735,608
1921	112,735,058	5,145,452
1922	13,085,648	386,894
1923	64,012,593	2,443,146
1924	27,951,572	1,895,642
1925	13,355,676	802,771

Not stated after 1925.

Lead Pigs and Bars

	Pounds.	Dollars.
1926	14,858,383	1,063,331
1927	23,218,768	1,659,590
1928	8,018,734	344,353

Lead Resinate

	Pounds.	Dollars.
1925	220	25
1926	.....	.....
1927	840	192
1928	1,323	303

Lead, Sublimed, Basic Sulphate

	Pounds.	Dollars.
1926	266	30
1927	11,000	563
1928	.....	.....

Leeches

	Number.	Dollars.
1891	.....	3,647
1901	.....	2,464
1913	.....	5,587
1914	.....	7,376
1915	.....	1,834
1916	.....	2,810
1917	.....	16,899
1918	.....	9,035
1919	.....	5,818
1920	.....	14,180
1921	.....	11,100
1922	.....	7,692
1923	.....	7,704
1924	247,827	6,528
1925	464,370	5,386
1926	396,078	4,419
1927	364,000	5,400
1928	332,320	4,415

Lemon, Lime and Sour Orange Juice

	*Gallons.	Dollars.
1871	.....	7,056
1881	.....	63,920
1891	.....	140,673
1901	.....	122,469
1913	.....	116,370
1914	.....	110,860
1915	.....	139,605
1916	.....	152,575
1917	.....	190,088
1918	.....	114,404
1919	1,933,465	277,031
1920	8,254,533	515,004
1921	1,009,320	165,827
1922	1,083,583	169,216
1923	1,534,662	176,662
1924	4,305,887	511,999
1925	3,668,362	533,479
1926	2,612,659	502,972
1927	445,296	450,957
1928	300,912	316,345

* Quantity stated in pounds prior to 1927.

Licorice Extract in Paste, Rolls or Other Forms

	Pounds.	Dollars.
1871	2,665,536	310,901
1881	872,900	111,072
1891	1,190,524	150,090
1901	878,634	96,404
1913	832,277	100,288
1914	946,016	122,210
1915	1,080,718	152,756
1916	1,702,927	230,129
1917	1,156,300	253,671
1918	734,976	229,812
1919	413,648	213,028
1920	1,116,621	773,970
1921	1,653,809	519,884
1922	1,444,253	333,434
1923	1,570,930	400,364
1924	1,002,100	198,465
1925	1,886,859	291,791
1926	1,396,076	260,478
1927	960,508	207,739
1928	827,570	164,291

Licorice Root

	Pounds.	Dollars.
1871	3,199,958	80,366
1881	29,927,501	575,720
1891	55,093,585	897,186
1901	96,113,444	1,737,709
1913	103,832,429	1,806,754
1914	86,754,245	1,526,057
1915	82,289,410	1,557,442
1916	52,784,042	1,792,573
1917	59,398,644	2,189,441
1918	27,051,021	1,868,886
1919	42,644,661	3,426,007
1920	47,582,849	2,983,716
1921	59,903,895	3,755,726
1922	52,437,947	2,157,916
1923	47,531,247	1,735,876
1924	86,867,065	2,891,142
1925	51,927,467	1,365,195
1926	57,548,736	1,562,846
1927	58,007,964	1,630,923
1928	74,642,197	2,169,944

Lime N. E. S.

	*Pounds.	Dollars.
1871	.....	11,315
1881	.....	24,968
1891	329,580	67,700
1901	477,755	65,413
1913	77,319	42,389
1914	65,066	42,926
1915	66,694	29,518
1916	92,321	42,537
1917	160,776	74,487
1918	147,080	77,733
1919	167,152	108,749
1920	278,046	219,986
1921	361,553	357,992
1922	224,189	241,580
1923	266,747	352,651
1924	488,845	411,550
1925	25,128,561	249,369
1926	27,206,642	264,408
1927	29,258,180	283,439
1928	24,636,817	230,922

* Stated in "100 pounds" prior to 1925.
Includes "Hydrated" prior to 1924.

Lime, Chlorinated, or Bleaching Powder

	Pounds.	Dollars.
1871	32,111,839	635,910
1881	74,624,420	820,073
1891	111,156,006	1,431,470
1901	110,962,467	1,372,829
1913	76,092,327	619,492
1914	48,497,239	416,893
1915	18,402,130	197,975
1916	3,289,790	80,418
1917	65,564	3,888
1918	535	83
1919	539,596	11,363
1920	830,007	18,611
1921	4,584,344	144,029
1922	17,374,617	267,065
1923	1,759,457	61,943
1924	10,837,833	48,789
1925	1,776,305	58,742
1926	3,011,028	77,700
1927	3,251,882	80,317
1928	1,987,523	76,317

Lime Citrate

	Pounds.	Dollars.
1891	28,358	4,337
1901	2,416,088	290,553
1913	5,526,954	756,309
1914	3,119,924	496,517
1915	6,242,244	1,102,629
1916	8,127,364	1,763,652
1917	6,361,458	1,554,577
1918	4,013,606	814,073
1919	2,773,095	1,136,057
1920	10,929,314	2,908,028
1921	5,060,407	1,104,576
1922	8,983,134	1,194,964
1923	7,572,925	1,103,584
1924	2,951,386	328,648
1925	1,984,741	211,289
1926	3,469,202	395,777
1927	1,755,948	190,202
1928	194,528	21,773

Lime, Hydrated

	Pounds.	Dollars.
1924	6,115,000	56,712
1925	3,535,460	29,189
1926	5,918,394	48,595
1927	9,910,581	80,272
1928	9,889,118	78,031

Litharge

	Pounds.	Dollars.
1871	70,889	3,870
1881	63,058	2,568
1891	87,970	4,334
1901	23,898	1,057
1913	34,022	1,649
1914	43,156	2,355
1915	14,779	774
1916	20,100	1,417
1917	220	42
1918	100	12
1919	.....	.....
1920	2	1
1921	21,100	2,653
1922	1,770	162
1923	21,405	1,250
1924	1,220	74
1925	4,040	496
1926	232	30
1927	402	54
1928	880	87

Lithopone and Other Combinations of Zinc Sulphide and Barium Sulphate

	Pounds.	Dollars.
1914	7,245,151	218,138
1915	6,185,345	195,828
1916	5,122,083	414,578
1917	231,869	20,591
1918	445,000	29,199
1919	233,338	17,678
1920	2,284,955	170,522
1921	3,270,179	249,014
1922	20,482,320	822,045
1923	20,632,881	821,318
1924	19,099,722	739,452
1925	13,396,004	500,741
1926	15,069,761	637,842
1927	16,538,451	645,259
1928	17,181,842	717,342

Litmus

	Pounds.	Dollars.
1881	.....	229
1891	.....	113
1901	.....	84
1913	.....	216
1914	.....	263
1915	.....	59
1916	.....	280
1917	.....	648
1918	.....	44
1919	5,016	4,177
1920	2,054	1,535
1921	5,303	3,419
1922	2,396	1,756

Included in "Cudbear, etc." after 1922.

Logwood

	Tons.	Dollars.
1881	72,018	1,342,933
1891	84,381	1,842,964
1901	54,480	857,991
1913	36,952	475,484
1914	30,172	379,754
1915	54,704	722,410
1916	134,819	3,437,388
1917	121,762	4,127,031
1918	55,354	1,175,049
1919	20,871	412,952
1920	45,073	1,144,455
1921	56,977	1,697,436
1922	31,418	644,513
1923	27,653	426,578
1924	31,330	590,285
1925	22,543	394,013
1926	21,387	422,543
1927	26,327	516,765
1928	35,035	614,750

Logwood Extract

	Pounds.	Dollars.
1871	.....	12,537
1881	6,091,388	454,984
1891	3,282,227	376,808
1901	2,864,874	191,852
1913	2,258,206	111,575
1914	1,226,178	77,119
1915	2,061,368	144,207
1916	2,652,787	316,872
1917	1,147,448	164,711
1918	215,954	24,698
1919	265,774	51,041
1920	868,297	70,910
1921	116,185	25,500
1922	1,317,694	78,601
1923	1,928,859	97,088
1924	1,693,963	119,156
1925	2,264,162	177,038
1926	2,756,576	204,734
1927	354,495	41,964
1928	126,861	23,089

Lupulin

	Pounds.	Dollars.
1924	7,589	12,357
1925	10,741	18,229
1926	14,479	41,735
1927	14,292	44,139
1928	30,606	51,325

Lycopodium

	Pounds.	Dollars.
1924	18,267	4,971
1925	4,923	2,515
1926	35,606	24,903
1927	47,000	33,084
1928	29,445	18,186

Mace, Unground

	Pounds.	Dollars.
1871	69,370	41,571
1881	86,914	30,111
1891	186,801	85,978
1901	321,146	78,785
1913	611,005	244,177
1914	287,976	112,178
1915	342,618	124,128
1916	426,096	130,796
1917	436,346	145,128
1918	371,746	118,168
1919	321,339	107,739
1920	552,040	184,357
1921	581,408	150,651
1922	734,025	131,543
1923	927,276	247,258
1924	761,825	297,995
1925	613,694	300,949
1926	690,075	440,411
1927	871,393	611,946
1928	677,097	501,772

Mace, Ground

	Pounds.	Dollars.
1928	560	350

Mace, Bombay or Wild, Unground

	Pounds.	Dollars.
1916	5,714	771
1916	22,400	6,720
1917	40,984	4,090
1918	1,791	924
1919	.....	.....
1920	3,236	397
1921	1,986	249
1922	8,964	1,494
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	2,217	1,855
1927	.....	.....
1928	4,809	2,005

Imports Into the United States

Magnesia, Calcined or Oxide

	Pounds.	Dollars.
1871	24,874	7,861
1881	20,815	6,182
1891	7,157	1,658
1901	22,362	4,069
1913	75,579	12,992
1914	109,806	15,118
1915	145,806	16,012
1916	46,006	7,560
1917	86,656	17,575
1918	12,166	4,488
1919	572	1,319
1920	38,391	15,068
1921	17,664	6,909
1922	60,998	10,474
1923	144,597	24,857
1924	113,487	34,054
1925	135,827	34,715
1926	905,754	44,858
1927	218,935	50,736
1928	259,765	48,270

Magnesia Carbonate, Precipitated

	Pounds.	Dollars.
1871	132,619	15,081
1881	350,140	33,232
1891	76,015	5,608
1901	13,897	994
1913	77,190	5,811
1914	86,698	5,972
1915	40,731	2,554
1916	19,998	1,414
1917	26,092	5,077
1918	5,681	1,906
1919	232	131
1920	19,112	2,311
1921	3,780	993
1922	26,888	2,906
1923	215,815	13,285
1924	1,108,429	57,630
1925	303,357	16,856
1926	256,635	15,958
1927	293,958	17,181
1928	306,474	17,415

Magnesia Chloride, Anhydrous

	Pounds.	Dollars.
1919	18,676	1,907
1920	214,107	3,371
1921	2,022,339	25,535
1922	9,011,216	102,464
1923	19,270,756	198,065
1924	56,692	2,738
1925	135,500	1,795
1926	.....	.....
1927	.....	.....
1928	44,374	315

Magnesia Chloride, N. E. S.

	Pounds.	Dollars.
1924	20,818,688	117,223
1925	14,343,695	88,305
1926	14,335,773	97,930
1927	13,614,086	96,802
1928	6,997,796	51,156

Magnesia, Silicofluoride or Fluosilicate

	Pounds.	Dollars
1927	775,736	45,416
1928	549,536	23,452

Magnesia Sulphate (Epsom Salt)

	Pounds.	Dollars.
1871	85,582	1,108
1881	17,410	298
1891	16,370	207
1901	266,290	1,882
1913	9,340,099	35,739
1914	13,550,809	48,742
1915	7,005,596	32,862
1916	1,450,254	8,568
1917	54,200	875
1918	48,540	915
1919	4,350	187
1920	662,866	8,925
1921	6,591,977	105,776
1922	16,180,525	119,951
1923	15,879,648	171,529
1924	9,650,802	54,047
1925	7,986,985	51,021
1926	8,330,790	48,070
1927	11,856,796	68,734
1928	11,057,379	63,980

Magnesite, Crude

	Pounds.	Dollars.
1901	65,996,858	281,901
1913	33,654,260	111,276
1914	21,500,605	46,611
1915	37,468,500	80,625
1916	101,691,456	281,951
1917	179,292,688	748,951
1918	18,562,767	104,947
1919	1,975	57,434
1920	13,881	282,708
1921	50,927	450,872
1922	60,372	907,827
1923	35,427	420,566
1924	2,890,394	11,287
1925	23,795	559
1926	963,489	6,546
1927	1,365,618	8,255
1928	1,968,266	9,160

Quantity stated in tons 1918-1923.

Magnesite, Caustic, Calcined

	Pounds.	Dollars.
1913	345,322,155	1,731,448
1914	288,989,577	1,485,273
1915	125,803,407	751,766
1916	32,372,610	282,768
1917	9,448,817	182,037
1918	22,704,029	535,202
1919	12,053	532,020
1920	13,619	365,623
1921	9,425	336,539
1922	16,340	442,259
1923	28,556	631,558
1924	28,761,792	366,645
1925	31,026,564	367,195
1926	32,482,377	371,218
1927	25,772,216	280,153
1928	15,440,005	193,101

Quantity stated in tons 1918-1923.

Magnesite, Dead-Burned and Grain

	Pounds.	Dollars.
1924	98,118,821	809,760
1925	109,364,992	785,136
1926	122,878,136	807,838
1927	109,854,340	697,472
1928	96,606,570	700,850

Magnesium, Metallic and Scrap

	Pounds.	Dollars.
1920	17,988	19,492
1921	43,297	34,128
1922	70,186	32,800
1923	135,622	87,992
1924	7,608	1,538
1925	1,501	785
1926	2,277	807
1927	7,385	2,105
1928	.....	.....

Magnesium Powder

	Pounds.	Dollars.
1927	4,690	5,207
1928	9,110	8,282

Malt Extract, Fluid and Malt Liquors

	Gallons.	Dollars
1923	905	895
1924	534	880
1925	289	522
1926	75	143
1927	1,645	2,252
1928	300	569

Malt Extract, Fluid, in Bottles or Jugs

	Gallons.	Dollars.
1881	.....	1,086
1891	46,966	48,802
1901	1,757	1,908
1913	1,405	2,878
1914	1,264	2,087
1915	316	589
1916	64	92
1917	516	485
1918	.....	.....
1919	3	5
1920	.....	.....
1921	3,766	4,116
1922	2,079	3,340

Not stated after 1922.

Malt Extract, Fluid, in Casks

	Gallons.	Dollars.
1891	13,727	6,817
1901	8,244	4,382
1913	9,191	9,661
1914	10,333	10,050
1915	4,124	3,951
1916	2,468	2,313
1917	10,783	10,606
1918	.....	.....
1919	.....	.....
1920	20	51
1921	1,878	3,018
1922	70	113

Not stated after 1922.

Malt Extract, Solid or Condensed

	Pounds.	Dollars.
1891	.....	187
1901	.....	400
1913	.....	388
1914	.....	767
1915	.....	7,004
1916	.....	11,884
1917	.....	71
1918	.....	44
1919	.....	.....
1920	.....	.....
1921	1,563	364
1922	.....	.....
1923	70	53
1924	.....	.....
1925	72	24
1926	518	110
1927	1,307	530
1928	37,840	3,870

Manganese Ore

	Tons.	Dollars.
1871	.....	12,321
1881	642	20,432
1891	48,559	628,672
1901	134,582	1,163,971
1913	407,169	2,195,595
1914	268,837	1,841,472
1915	206,913	1,494,965
1916	492,967	5,358,087
1917	656,026	10,542,572
1918	557,711	11,944,515
1919	873,202	16,358,741
1920	323,901	8,086,001
1921	682,770	10,199,612
1922	257,208	1,536,662
1923	228,431	2,658,688
1924	161,078	3,814,808
1925	180,087	4,978,517
1926	311,396	8,206,184
1927	349,016	10,420,088
1928	267,945	7,422,787

Manganese Borate

	Pounds	Dollars.
1924	17,540	1,911
1925	10,164	718
1926	24,166	1,781
1927	11,720	1,076
1928	9,679	832

Manganese Resinate

	Pounds.	Dollars.
1924	66,490	4,980
1925	45,306	3,744
1926	.....	.....
1927	.....	.....
1928	.....	.....

Manganese Sulphate

	Pounds.	Dollars.
1924	85,293	4,344
1925	97,595	4,733
1926	57,729	2,650
1927	26,982	1,676
1928	24,713	1,433

Manganese Compounds and Salts, N. E. S.

	Pounds.	Dollars.
1924	288,513	24,271
1925	140,430	6,613
1926	299,743	17,315
1927	286,770	16,167
1928	199,820	11,489

Mangrove Extract for Tanning

	Pounds.	Dollars
1924	5,646,528	137,394
1925	3,527,478	87,523
1926	2,066,087	57,140
1927	2,068,507	60,857
1928	633,507	22,065

Manna, Crude

	Pounds.	Dollars.
1871	.....	13,283
1881	35,456	15,061
1891	24,792	7,471
1901	24,883	12,084
1913	30,369	16,305
1914	88,240	32,848
1915	36,882	12,270
1916	98,487	32,484
1917	75,236	48,018
1918	92,097	51,083
1919	44,068	27,794
1920	112,818	52,145
1921	29,824	14,474
1922	32,768	15,025
1923	97,085	39,084
1924	24,809	12,075
1925	73,328	29,668
1926	55,049	21,496
1927	47,410	15,916
1928	67,516	26,105

Manna, Advanced in Value

	Pounds.	Dollars.
1925	2,465	2,134
1926	13	14
1927	1,139	522
1928	.....	.....

Manure Salts, Double Manure Salts and Hard Salts

	Tons.	Dollars.
1913	172,597	1,798,778
1914	260,977	2,797,013
1915	66,411	757,151
1916	2,278	42,368
1917	324	7,794
1918	225	9,047
1919	.....	.....
1920	240,899	8,215,068
1921	123,273	4,165,817
1922	81,442	957,443
1923	284,026	2,150,254
1924	244,994	2,687,062
1925	300,547	2,858,124
1926	372,124	3,716,362
1927	256,053	2,706,938
1928	375,801	5,021,710

Marjoram Leaves, Unground

	Pounds.	Dollars.
1924	330	50
1925	.....	.....
1926	.....	.....
1927	6,963	1,816
1928	5,595	577

Matches, Friction or Lucifer

		Dollars
1871	.....	.....
1881	.....	17,076
1891	.....	88,041
1901	.....	176,909
1913	.....	721,081
1914	.....	889,838
1915	.....	653,699
1916	.....	900,430
1917	.....	1,890,808
1918	.....	3,343,800
1919	.....	1,406,151
1920	.....	945,297
1921	.....	1,135,284
1922	.....	1,904,709
1923	.....	1,997,765
1924	.....	2,054,834
1925	.....	2,225,848
1926	.....	2,194,515
1927	.....	2,231,895
1928	.....	2,249,171

Mate, Crude

	Pounds.	Dollars.
1924	2,309	808
1925	.....	.....
1926	6,922	1,995
1927	1,452	95
1928	.....	.....

Mate, Advanced in Value

	Pounds.	Dollars.
1925	7,582	1,380
1926	.....	.....
1927	24,129	4,148
1928	55,178	8,451

Meat Extracts, Fluid

	Pounds.	Dollars
1913	39,094	11,096
1914	8,768	3,956
1915	3,788	4,428
1916	172	264
1917	1,990	3,682
1918	12	22
1919	1,013	1,677
1920	11,584	16,078
1921	2,497	2,117
1922	2,174	3,862

Not stated after 1922.

Meat Extracts, All Other

	Pounds.	Dollars
1913	106,313	138,489
1914	130,672	198,187
1915	97,056	139,986
1916	78,614	100,652
1917	96,108	155,766
1918	1,401	1,411
1919	9,482	12,111
1920	14,375	14,114
1921	87,363	57,787
1922	123,020	116,869

Not stated after 1922.

Meat Extracts

	Pounds.	Dollars.
1923	250,889	248,644
1924	336,678	304,400
1925	267,954	223,435
1926	319,784	309,504
1927	478,644	704,373
1928	467,035	639,611

Menthol

	Pounds.	Dollars.
1913	49,896	289,058
1914	127,924	408,954
1915	111,020	236,759
1916	145,208	300,580
1917	172,767	398,191
1918	172,450	446,386
1919	248,743	1,055,920
1920	181,160	1,208,908
1921	239,297	1,575,824
1922	162,263	770,694
1923	293,168	1,299,787
1924	207,624	1,539,519
1925	273,197	2,580,489
1926	407,581	2,645,302
1927	538,401	1,374,106
1928	314,807	1,094,608

Mercurial Medicinal Preparations, N. E. S.

	Pounds.	Dollars.
1921	6,769	8,149
1922	1,967	1,424
1923	1,985	3,520

Included in "Mercury Preparations, N. E. S." after 1923.

Mercury Oxide (Red Precipitate)

	Pounds.	Dollars.
1924	8,728	6,672
1925	11,752	9,881
1926	36,500	34,151
1927	23,520	23,850
1928	6,148	7,189

Mercury Preparations, N. E. S.

	Pounds.	Dollars.
1924	14,460	12,301
1925	24,262	19,887
1926	8,378	7,043
1927	12,301	13,440
1928	20,076	24,430

Metacresol, Orthocresol and Paracresol

	Pounds.	Dollars.
1918	20,708	1,404
1919	11,200	1,221
1920	2,340	2,065
1921	204	175
1922	3,290	518
1923	13,714	7,361

Stated separately after 1923.

Metacresol, Orthocresol and Paracresol, Purity Less than 90%

	Pounds.	Dollars.
1924	3,213	1,697
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Metacresol, Orthocresol and Paracresol, Purity of 90% or More

	Pounds.	Dollars.
1924	9,001	1,211
1925	16,408	3,908
1926	115,352	15,071
1927	131,501	22,778
1928	115,546	30,429

Methanol

	Gallons.	Dollars
1913	362	387
1914	109,022	42,598
1915	39,485	11,880
1916	46,829	9,496
1917	11,267	4,502
1918	205,276	202,994
1919	4,375	11,141
1920	566	1,958
1921	214,328	325,730
1922	20	31
1923	15,736	12,580
1924	249	128
1925	308,088	141,044
1926	494,982	223,908
1927	1,661,715	735,407
1928	637,178	224,506

Methylanthraquinone

	Pounds.	Dollars.
1927	4,989	1,147
1928	.....	.....

Mica, Ground

	Pounds.	Dollars.
1913	577,061	6,592
1914	401,606	4,002
1915	378,768	4,143
1916	436,037	4,302
1917	152,963	1,584
1918	111,067	1,264
1919	612	272
1920	6,995	10,228
1921	760	1,755
1922	285,295	4,289
1923	1,299,136	23,362
1924	1,444,559	23,806
1925	1,279,516	18,474
1926	420,120	5,807
1927	20,602	378
1928	150	53

Mineral Salts Obtained by Evaporation from Mineral Waters

	Pounds.	Dollars.
1901	150,631	31,811
1913	103,337	35,420
1914	82,569	40,840
1915	10,757	9,642
1916	425	213
1917	626	313
1918	4,699,735	14,230
1919	1,414,450	10,237
1920	753,859	10,946
1921	97,708	13,814
1922	608,540	13,379
1923	37,863	18,685
1924	26,459	28,735
1925	26,890	24,019
1926	438,125	25,095
1927	111,108	22,639
1928	527,697	35,191

Monazite Sand and Other Thorium Ores

	*Tons.	Dollars.
1913	1,145,010	94,425
1914	170,792	12,984
1915	1,493,028	133,819
1916	2,468,146	191,576
1917	4,020,023	363,231
1918	4,941,385	352,383
1919	952,304	55,898
1920	1,148,447	99,672
1921	1,036,420	71,745
1922	101,550	7,978
1923	3,896,044	202,249
1924	480	29,654
1925	.....	.....
1926	151	12,940
1927	596	45,837
1928	478	30,118

* Quantity stated in pounds prior to 1924.

Morphine Sulphate

	Ounces.	Dollars.
1871	237	1,066
1881	22,358	55,531
1891	29,584	42,269
1901	50,819	147,517
1913	24,797	141,221
1914	5,805	14,220
1915	1,388	3,300
1916	2,685	8,906
1917	5,584	22,575
1918	25,115	202,265
1919	25,370	158,307
1920	7,460	32,111
1921	1,550	4,594
1922	3,400	8,466
1923	200	851

No imports allowed after 1923.

Moss and Seaweeds, Unmanufactured

	Pounds.	Dollars.
1913	.....	150,189
1914	.....	246,196
1915	.....	186,029
1916	.....	224,928
1917	.....	182,808
1918	.....	224,465
1919	18,251,917	297,134
1920	6,872,608	490,070
1921	7,988,370	505,100
1922	7,744,683	477,453
1923	12,358,582	571,290
1924	8,601,207	554,745
1925	10,037,494	601,571
1926	10,307,316	550,540
1927	15,096,398	638,664
1928	13,204,948	531,581

Musk, Artificial, Etc.

	Pounds.	Dollars.
1925	69,597	235,723
1926	149,080	378,568
1927	132,375	341,991
1928	148,426	455,341

Imports Into the United States

Musk, in Grain

	Ounces.	Dollars.
1913	.....	7,690
1914	.....	3,991
1915	.....	624
1916	.....	534
1917	.....	41,304
1918	.....	20,346
1919	6,360	7,158
1920	414	3,228
1921	3,059	30,995
1922	2,198	25,980

Not stated after 1922.

Musk in Pod

	Ounces.	Dollars.
1901	6,167	80,201
1901	9,358	71,200
1913	13,986	134,325
1914	3,261	20,976
1915	10,115	66,662
1916	7,800	62,094
1917	12,415	89,088
1918	8,616	85,970
1919	10,340	176,008
1920	16,056	261,520
1921	5,828	96,786
1922	5,352	70,314

Not stated after 1922.

Musk in Grain or Pod

	Pounds.	Dollars.
1923	754	152,514
1924	1,074	139,727
1925	627	197,644
1926	402	151,823
1927	626	204,763
1928	742	254,076

Myrobalans Fruit

	*Tons.	Dollars.
1913	19,735,724	195,204
1914	24,256,373	438,672
1915	18,417,434	198,347
1916	25,612,705	375,401
1917	16,087,463	421,824
1918	4,408,522	110,444
1919	9,597,836	186,517
1920	62,196,177	993,962
1921	28,077,222	372,205
1922	28,567,166	194,465
1923	47,218,672	462,758
1924	13,572	352,057
1925	11,201	325,541
1926	12,976	514,771
1927	17,213	573,839
1928	27,384	989,645

* Quantity stated in pounds prior to 1924.

Naphthalene, Solidifying at Less Than 79 Degree C.

	Pounds.	Dollars.
1918	3,579,187	146,655
1919	3,591,108	109,381
1920	6,113,768	165,383
1921	13,925,789	515,078
1922	2,344,951	52,496
1923	12,153,047	287,836
1924	14,020,568	397,386
1925	2,044,728	34,256
1926	5,354,458	97,232
1927	6,419,923	118,597
1928	15,529,243	205,378

Naphthalene, Solidifying at 79 Degree C. or Above

	Pounds.	Dollars.
1918	92,888	4,998
1919	60	10
1920	161,871	8,076
1921	3,974,776	439,238
1922	53,496	5,458
1923	32,374	2,028
1924	14,134	1,326
1925	20	15
1926	.....	.....
1927	424	125
1928	18,695	3,083

Naphthol, Alpha and Beta, Not Medicinal

	Pounds.	Dollars.
1921	54,341	64,248
1922	279,623	49 353
1923	10,050	22,120
1924	14,352	31,771
1925	2,310	975
1926	12,955	19,155
1927	28,191	35,176
1928	47,290	98,183

Naphthylamine and Naphthylenediamine

	Pounds.	Dollars.
1918	11,761	5,896
1919	.....	.....
1920	.....	.....
1921	69,695	7,208
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	250	255
1928	2,003	2,373

Nickel Oxide

	Pounds.	Dollars.
1913	1,124	898
1914	2,720	1,245
1915	1,071	506
1916	497	130
1917	21,488	6,478
1918	5,534	1,406
1919	7,774	2,430
1920	1,076	324
1921	1,155	165
1922	60,698	17,414
1923	2,966,259	322,536
1924	1,407,931	176,086
1925	796,071	121,107
1926	1,777,799	247,353
1927	1,264,188	220,447
1928	961,776	140,497

Nitroanilin, Para and Meta, Etc.

	Pounds.	Dollars.
1925	500	575
1926	29,300	9,617
1927	7,560	3,438
1928	203,872	80,904

Nitrobenzol

	Pounds.	Dollars.
1920	43,623	7,222
1921	23,781	2,790

Not stated after 1922.

Nitrophenylenediamine

	Pounds.	Dollars.
1922	1,132	6,590
1923	.....	.....
1924	.....	.....
1925	.....	.....

Not stated after 1925.

Novocain or Procain

	Pounds.	Dollars.
1924	5	210
1925	.....	.....
1926	5	610
1927	3	1,020
1928	12	4,842

Nutgalls and Gall Nuts

	Pounds.	Dollars.
1901	.....	248,746
1913	.....	126,435
1914	.....	177,788
1915	.....	137,972
1916	.....	420,080
1917	.....	214,653
1918	.....	872,173
1919	1,760,746	362,975
1920	2,776,978	647,268
1921	2,248,961	532,076
1922	565,508	75,496
1923	3,497,718	835,585
1924	2,386,592	205,402
1925	2,932,689	287,525
1926	3,350,696	350,556
1927	3,726,423	354,000
1928	2,958,351	292,999

Nutgall Extract

	Pounds.	Dollars.
1913	145,919	18,225
1914	205,130	25,017
1915	157,064	23,262
1916	61,055	11,444
1917	45,760	9,867
1918	36,475	12,761
1919	34,033	12,508
1920	48,654	26,565
1921	4,219	1,114
1922	32,458	5,192
1923	150,505	28,455

Included in "Acid, Tannic, Not Medicinal," after 1923.

Nutmegs, Unground

	Pounds.	Dollars.
1871	919,990	390,175
1881	999,504	573,917
1891	1,324,898	684,277
1901	1,922,689	876,447
1913	3,458,339	368,984
1914	1,755,653	184,779
1915	2,879,996	283,861
1916	3,590,950	420,503
1917	4,201,872	661,012
1918	3,437,056	528,950
1919	3,893,019	674,016
1920	3,651,319	691,849
1921	3,474,243	576,103
1922	3,916,059	447,349
1923	5,081,636	572,983
1924	3,174,098	550,676
1925	3,969,050	1,160,776
1926	3,696,574	1,178,227
1927	3,837,333	1,001,192
1928	4,549,577	1,005,516

Nutmegs, Ground

	Pounds.	Dollars.
1928	3,971	1,007

Nux Vomica

	Pounds.	Dollars.
1871	496,639	13,972
1881	1,172,909	17,649
1891	1,394,818	32,930
1901	1,581,757	30,560
1913	2,206,735	39,390
1914	1,891,072	32,985
1915	2,245,338	51,507
1916	4,355,964	134,356
1917	2,445,984	86,018
1918	2,739,804	111,711
1919	4,543,710	348,559
1920	4,470,328	275,904
1921	3,190,255	272,533
1922	1,063,608	70,998
1923	2,329 747	120,349
1924	1,261,828	37,166
1925	1,612,198	50,293
1926	1,940,754	39,656
1927	3,367,125	76,747
1928	2,235,050	50,528

Ochers, Crude, Not Ground

	Pounds.	Dollars.
1871	2,954,716	40,270
1881	3,589,600	65,393
1891	6,823,251	79,465
1901	7,410,929	55,501
1913	17,583,272	162,387
1914	21,641,976	154,547
1915	17,430,128	124,359
1916	18,049,375	153,880
1917	17,873,109	213,272
1918	7,087,557	131,055
1919	13,577,765	341,701
1920	13,264,966	229,526
1921	25,172,178	324,496
1922	11,856,246	198,701
1923	7,284,183	113,928
1924	105,087	1,913
1925	235,090	3,448
1926	235,622	4,470
1927	199,295	5,908
1928	426,174	17,920

Ocher and Sienna, Washed or Ground

	Pounds.	Dollars.
1924	14,151,414	176,416
1925	19,172,432	222,105
1926	18,695,498	305,331
1927	17,565,140	370,759
1928	19,851,367	373,124

Oilcake and Oilcake Meal, Coconut or Copra

	Pounds.	Dollars.
1917	29,867	400
1918	34,824	355
1919	3,474,947	51,037
1920	80,903,960	1,535,468
1921	117,208,327	2,038,122
1922	37,162,444	955,691
1923	62,626,038	1,041,922
1924	58,161,605	541,502
1925	55,249,461	815,736
1926	44,754,819	595,568
1927	27,802,206	301,458
1928	35,462,433	515,822

Oilcake and Oilcake Meal, Cottonseed

	Pounds.	Dollars.
1901	.....	.....
1913	400,686	3,322
1914	5,744,090	53,214
1915	1,743,113	15,706
1916	10,289,336	108,413
1917	34,281,702	372,812
1918	29,877,055	456,848
1919	51,377,272	1,049,182
1920	35,093,455	824,834
1921	22,061,743	423,801
1922	3,890,509	51,046
1923	667,046	10,412
1924	2,461,072	45,977
1925	5,016,007	96,010
1926	969,609	14,600
1927	27,451,364	370,702
1928	25,217,982	355,285

Oilcake and Oilcake Meal, Cottonseed and Linseed (Bibby's)

	Pounds.	Dollars.
1913	2,571,694	37,455
1914	2,406,035	24,332
1915	2,996,201	38,238
1916	10,819,746	129,843
1917	6,570,668	82,385
1918	2,751,880	54,980
1919	2,502,984	54,750
1920	1,998,434	56,740
1921	4,773,303	107,794
1922	8,209,010	151,800
1923	5,627,995	72,634
1924	442,000	5,709
1925	1,284,010	23,278
1926	377,440	7,494
1927	708,630	11,813
1928	2,292,888	33,269

Oilcake and Oilcake Meal, Linseed

	Pounds.	Dollars.
1924	17,548,693	326,875
1925	19,087,026	347,923
1926	19,750,556	408,876
1927	39,341,526	790,747
1928	45,651,074	983,810

Oilcake and Oilcake Meal, Peanut

	Pounds.	Dollars.
1920	1,120,277	30,006
1921	101,072	2,188
1922	.....	.....
1923	459,056	12,018
1924	7,382,872	140,459
1925	2,790,380	44,524
1926	2,170,000	41,757
1927	3,814,601	70,237
1928	16,792,007	378,520

Oilcake, Soya Bean

	Pounds.	Dollars.
1913	7,004,803	93,002
1914	3,163,260	38,255
1915	5,975,592	64,307
1916	10,468,001	103,081
1917	11,760,985	136,064
1918	586,820	9,954
1919	2,763,090	129,277
1920	16,273,785	408,895
1921	31,226,207	655,805
1922	17,701,339	339,021

Not stated after 1922.

Oilcake, All Other Bean

	Pounds.	Dollars.
1913	579,794	5,914
1914	142,878	1,685
1915	724,072	13,035
1916	4,802,119	53,173
1917	895,079	11,400
1918	1,389,434	17,628
1919	614,192	14,508
1920	2,056,639	42,082
1921	10,374,980	269,166
1922	4,591,694	105,311

Not stated after 1922.

Oilcake and Oilcake Meal, Bean (Soya and Other)

	Pounds.	Dollars.
1923	27,722,028	525,018
1924	31,109,043	576,296
1925	41,315,288	773,973
1926	35,496,842	731,684
1927	32,572,056	830,427
1928	78,245,940	1,475,225

Oilcake and Oilcake Meal, All Other

	Pounds.	Dollars.
1901	1,749	172
1919	352,049	23,437
1920	4,832,987	111,056
1921	10,946,891	200,299
1922	3,975,911	52,876
1923	19,387,703	304,289
1924	11,185,644	186,304
1925	6,495,406	106,607
1926	7,346,736	140,771
1927	6,389,911	126,827
1928	11,603,642	180,673

Oil, Almond, Bitter

	Pounds.	Dollars.
1871	1,440	14,122
1881	3,642	12,342
1891	4,795	9,958
1901	4,096	9,998
1913	10,442	25,629
1914	7,526	21,804
1915	2,711	9,184
1916	3,902	15,400
1917	4,128	27,754
1918	1,887	18,154
1919	1,333	14,427
1920	4,428	19,240
1921	4,825	14,979
1922	4,461	18,270
1923	9,253	28,187
1924	6,602	19,025
1925	11,962	21,868
1926	7,138	16,748
1927	11,947	30,297
1928	11,120	27,589

Oil, Almond, Sweet

	Pounds.	Dollars.
1871	18,959	5,681
1881	34,325	12,041
1891	51,394	12,249
1901	81,074	14,012
1913	152,300	63,583
1914	52,550	22,777
1915	43,321	23,495
1916	68,838	36,400
1917	38,939	23,481
1918	36,283	25,052
1919	29,586	26,456
1920	55,096	33,420
1921	43,515	21,963
1922	71,418	29,773
1923	54,430	25,529
1924	76,977	25,868
1925	56,730	36,265
1926	51,933	61,750
1927	77,844	59,384
1928	48,349	42,103

Oil, Amber

	Pounds.	Dollars.
1871	2,279	583
1881	6,211	1,431
1891	3,444	894
1901	38,082	3,304
1913	18,707	1,027
1914	15,648	1,058
1915	2,720	289
1916	674	250
1917	7,580	2,932
1918	1,080	458
1919	3,900	4,530
1920	2,227	1,935
1921	1,084	354
1922	1,840	653
1923	544	361
1924	200	86
1925	1,500	694
1926	1,547	497
1927	2,750	435
1928	1,272	345

Oil, Ambergris

	Pounds.	Dollars.
1891	78	1,509
1901	26	2,258
1919	2	212
1920	.....	.....
1921	.....	.....
1922	3	409

Not stated after 1922.

Oil, Anise

	Pounds.	Dollars.
1871	10,475	16,355
1881	27,232	49,660
1891	37,335	55,556
1901	57,564	67,926
1913	127,501	173,078
1914	42,672	55,692
1915	117,188	119,972
1916	206,609	156,411
1917	266,686	150,849
1918	160,774	122,459
1919	77,757	72,836
1920	218,382	227,172
1921	225,329	141,497
1922	42,230	21,638
1923	275,501	132,580
1924	183,819	62,743
1925	141,513	60,793
1926	131,955	77,209
1927	197,658	90,399
1928	132,865	62,201

Oil, Bergamot

	Pounds.	Dollars.
1871	30,592	93,260
1881	41,796	95,390
1891	44,110	131,801
1901	75,640	143,740
1913	64,259	310,835
1914	38,647	148,753
1915	58,621	157,519
1916	69,440	178,300
1917	50,634	179,182
1918	57,689	241,465
1919	41,262	185,318
1920	92,708	369,727
1921	33,565	143,667
1922	62,566	249,302
1923	87,626	221,207
1924	84,578	246,541
1925	100,112	326,157
1926	80,928	308,808
1927	108,657	639,532
1928	101,197	413,932

Oil, Birch Tar

	Pounds.	Dollars.
1914	40,123	1,898
1915	12,098	571
1916	47,757	3,183
1917	24,073	3,717
1918	110,055	22,443
1919	.....	.....
1920	220	108
1921	2,467	510
1922	3,705	1,142
1923	10,820	539
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	2,248	510
1928	1,681	400

Oil, Cajeput

	Pounds.	Dollars.
1871	1,864	1,163
1881	7,019	4,421
1891	22,260	9,827
1901	12,350	4,472
1913	9,143	3,224
1914	14,110	4,757
1915	19,243	6,999
1916	96,626	18,992
1917	79,585	29,585
1918	10,563	3,538
1919	18,853	11,239
1920	27,775	18,629
1921	7,375	2,601
1922	2,904	1,515
1923	45,075	16,008
1924	20,025	7,830
1925	5,423	2,874
1926	14,055	5,689
1927	13,715	6,375
1928	16,776	8,274

Oil, Camomile

	Pounds.	Dollars.
1881	25	316
1891	19	249
1901	25	456
1913	4½	88
1914	12	247
1915	3	67
1916	.....	.....
1917	.....	.....
1918	5	60
1919	.....	.....
1920	15	233
1921	11	128
1922	10	438
1923	5	194
1924	.....	.....
1925	.....	.....
1926	6	145
1927	.....	.....
1928	4	109

Oil, Camphor

	Pounds.	Dollars.
1913	.....	.....
1914	18,874	3,160
1915	68	12
1916	8,333	5,708
1917	224	899
1918	236,000	21,245
1919	131	56
1920	3,635	1,270
1921	39,140	6,688
1922	7,568	2,721
1923	1,890,469	155,134
1924	1,757,125	137,534
1925	2,389,676	176,336
1926	1,322,787	123,378
1927	2,680,453	248,376
1928	1,944,219	171,989

Oil, Cananga or Ylang Ylang

	Pounds.	Dollars.
1924	24,903	100,471
1925	22,761	83,778
1926	25,173	113,328
1927	34,482	224,665
1928	35,505	221,781

Oil, Caraway

	Pounds.	Dollars.
1871	6,305	8,772
1881	7,522	10,799
1891	.....	.....
1901	17,890	9,693
1913	10,107	10,453
1914	3,669	5,068
1915	18,107	20,750
1916	15,567	23,586
1917	3,725	4,206
1918	4,982	24,483
1919	.....	.....
1920	6,887	23,501
1921	6,071	11,388
1922	2,926	4,296
1923	7,125	26,576
1924	4,218	24,664
1925	7,882	30,211
1926	9,501	11,930
1927	8,460	11,571
1928	7,337	10,460

Imports Into the United States

Oil, Cassia and Cinnamon

	Pounds.	Dollars
1871	25,734	26,754
1881	104,900	82,885
1891	27,980	22,732
1901	84,262	61,141
1913	123,645	97,438
1914	79,155	49,528
1915	54,962	34,411
1916	121,064	85,974
1917	153,244	130,112
1918	109,178	114,796
1919	123,150	201,295
1920	174,855	286,122
1921	102,010	133,551
1922	114,697	89,789
1923	224,782	277,833
1924	260,614	418,157
1925	325,561	500,138
1926	316,926	470,412
1927	384,578	526,710
1928	292,454	339,139

Oil, Castor

	*Pounds	Dollars
1871	29,314	20,241
1881	1,464	959
1891	2,073	1,287
1901	462	292
1913	5,241	6,396
1914	189,583	88,053
1915	68,006	29,206
1916	253,077	223,130
1917	328,703	286,098
1918	1,175,064	1,366,573
1919	482,216	845,282
1920	271,425	238,981
1921	99,017	124,315
1922	45,734	35,260
1923	145,488	135,792
1924	271,498	32,113
1925	308,859	39,810
1926	492,504	52,170
1927	163,512	21,357
1928	933,861	92,076

* Quantity stated in gallons prior to 1924.

Oil, Cedrat or Citron

	Pounds.	Dollars
1891	311	2,836
1901	92	519
1913	115	555
1914	159	770
1915	788	3,721
1916	438	1,966
1917	.....	.....
1918	20	158
1919	336	531
1920	5	12
1921	.....	.....
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	26	16
1926	287	561
1927	489	1,732
1928	407	1,586

Oil, Chinese Wood, Nut or Tung Oil or Oil of Nuts

	*Pounds.	Dollars.
1871	131,852	79,881
1881	18,428	8,682
1891	67,312	30,641
1901	365,747	169,892
1913	6,004,045	2,738,000
1914	4,878,764	1,960,426
1915	4,723,584	1,649,270
1916	4,968,262	1,977,823
1917	6,846,631	4,046,132
1918	4,818,740	4,038,872
1919	6,218,557	7,248,054
1920	10,613,638	12,736,431
1921	4,439,975	4,817,062
1922	7,499,572	5,141,969
1923	11,918,985	10,188,994
1924	10,786,453	13,847,626
1925	94,696,963	10,957,533
1926	84,860,373	9,118,828
1927	102,428,461	12,318,928
1928	83,628,168	10,720,716

* Quantity stated in gallons prior to 1925.

Oil, Citronella and Lemon Grass

	Pounds.	Dollars
1871	18,202	13,535
1881	103,152	84,290
1891	355,735	73,764
1901	288,247	59,593
1913	885,486	287,579
1914	702,516	263,149
1915	865,376	307,676
1916	1,054,211	387,631
1917	1,082,035	445,732
1918	900,853	369,234
1919	549,837	246,576
1920	1,062,821	673,029
1921	586,697	402,686
1922	1,219,669	462,132
1923	848,283	510,152
1924	786,743	558,438
1925	1,171,911	913,787
1926	1,368,588	918,034
1927	1,259,507	631,110
1928	1,615,692	1,095,787

Oil, Civet

	Ounces.	Dollars.
1881	.....	38
1891	.....	.....
1901	792	1,326
1913	1,155	1,688
1914	250	392
1915	5,181	7,365
1916	.....	.....
1917	.....	.....
1918	3,277	5,136
1919	361	890
1920	3,000	7,290
1921	1,504	3,711
1922	1,771	1,751
1923	16,853	20,712

Not stated after 1923.

Oil, Clove

	Pounds.	Dollars.
1924	4,940	8,537
1925	1,709	2,866
1926	3,953	6,998
1927	1,658	2,479
1928	4,531	4,187

Oil, Coconut

	Pounds.	Dollars.
1871	195,462	87,288
1881	577,624	297,492
1891	10,665,054	560,833
1901	27,055,646	1,386,247
1913	50,493,858	4,182,654
1914	74,588,195	6,726,107
1915	63,249,424	5,430,581
1916	66,574,349	6,052,225
1917	79,359,009	9,141,536
1918	259,004,748	30,219,756
1919	347,200,288	43,749,146
1920	269,226,961	38,588,135
1921	166,417,897	20,287,334
1922	213,344,572	16,274,425
1923	145,807,433	10,099,173
1924	181,318,954	13,935,069
1925	250,276,667	20,250,222

Stated separately after 1925.

Oil, Coconut, Product of Philippine Islands

	Pounds.	Dollars.
1926	200,878,120	18,113,291
1927	286,776,114	23,751,536
1928	273,308,520	21,739,728

Oil, Coconut, All Other

	Pounds.	Dollars.
1926	628,805	71,990
1927	78,598	7,201
1928	62,203	6,552

Oil, Cod

	Gallons.	Dollars.
1913	466,494	135,969
1914	1,091,246	382,992
1915	1,372,413	433,14.
1916	1,578,227	678,32.
1917	1,163,566	728,804
1918	1,747,791	1,526,332
1919	932,948	1,091,722
1920	1,535,876	1,509,358
1921	877,521	561,195
1922	1,775,219	600,672
1923	1,959,223	986,221
1924	1,494,386	802,416
1925	1,979,623	957,603
1926	2,062,062	1,030,785
1927	2,405,472	1,221,149
1928	1,915,180	968,469

Oil, Codliver

	Gallons.	Dollars.
1871	.....	20,476
1881	144,771	45,300
1891	249,894	98,865
1901	235,949	137,765
1913	262,516	137,872
1914	371,567	262,927
1915	264,630	157,090
1916	170,876	334,006
1917	265,557	659,192
1918	264,108	585,172
1919	161,291	449,014
1920	407,481	962,427
1921	337,139	506,849
1922	262,763	169,078
1923	414,656	272,885
1924	710,949	505,843
1925	1,136,804	859,434
1926	1,258,348	1,140,931
1927	2,063,893	2,023,043
1928	2,413,686	2,341,102

Oil, Cornmint

	Pounds.	Dollars.
1927	8,840	27,644
1928	8,700	13,997

Oil, Cottonseed

	Pounds.	Dollars.
1881	20	7
1891	.....	.....
1901	8,185	6,259
1913	3,383,906	185,396
1914	17,510,918	1,046,703
1915	15,162,360	728,961
1916	17,516,391	924,654
1917	12,961,339	985,616
1918	14,378,013	1,639,882
1919	20,964,012	2,085,027
1920	24,164,821	3,255,228
1921	1,315,265	131,334
1922	240	25
1923	45,297	4,575
1924	149	36
1925	.....	.....
1926	282,712	22,174
1927	6,395,939	676,342
1928	534	66

Oil, Creosote, or Dead

	Gallons.	Dollars.
1901	2,072,428	155,331
1913	63,997,602	3,711,328
1914	59,271,677	3,822,919
1915	37,352,340	2,541,845
1916	40,496,987	3,206,780
1917	29,066,915	2,183,859
1918	3,857,869	329,846
1919	9,094,960	1,096,319
1920	8,338,761	1,171,717
1921	27,779,736	5,887,340
1922	39,143,044	3,965,786
1923	52,565,292	6,850,489
1924	81,353,086	13,522,540
1925	88,416,560	11,435,278
1926	84,845,690	10,927,967
1927	89,256,536	13,252,721
1928	92,371,381	14,475,542

Oil, Croton

	Pounds.	Dollars.
1871	4,571	4,744
1881	2,542	2,112
1891	59	35
1901	462	219
1913	4,873	4,414
1914	6,186	5,649
1915	4,010	3,481
1916	.....	.....
1917	500	503
1918	1,200	1,274
1919	.....	.....
1920	2,478	3,142
1921	2,502	2,491
1922	1,800	1,813
1923	3,600	2,701
1924	12,753	3,442
1925	5,840	3,857
1926	660	364
1927	560	367
1928	1,350	921

Oils, Essential and Distilled, Not Elsewhere Specified

	Pounds.	Dollars.
1901	.....	235,699
1913	.....	821,398
1914	.....	804,505
1915	.....	743,076
1916	.....	767,719
1917	.....	970,736
1918	.....	1,142,496
1919	.....	309,971
1920	.....	2,740,152
1921	.....	2,198,690
1922	.....	1,622,947
1923	.....	1,987,608
1924	149,566	338,115
1925	42,620	293,251
1926	112,880	412,117
1927	266,645	236,614
1928	145,199	165,145

Oil, Eucalyptus

	Pounds.	Dollars.
1913	31,047	7,205
1914	68,053	21,079
1915	99,218	27,095
1916	110,736	29,993
1917	230,035	83,111
1918	269,275	97,874
1919	116,781	45,689
1920	291,492	137,190
1921	156,394	70,681
1922	175,901	66,871
1923	185,630	58,404
1924	247,826	91,834
1925	180,665	69,689
1926	200,749	69,925
1927	238,368	84,420
1928	308,960	117,251

Oils, Expressed and Extracted, Not Elsewhere Specified

	Pounds.	Dollars.
1901	.....	21,103
1913	.....	61,027
1914	.....	49,053
1915	.....	65,437
1916	.....	118,295
1917	.....	79,889
1918	.....	138,660
1919	1,088,636	174,463
1920	644,211	134,481
1921	554,659	88,459
1922	371,440	52,828
1923	9,358,574	686,706
1924	1,519,967	97,721
1925	344,759	29,746
1926	667,839	72,783
1927	1,954,078	194,180
1928	2,057,582	178,287

Oil, Fennel

	Pounds.	Dollars.
1871	373	392
1881	1,815	2,331
1891	774	463
1901	1,839	1,353
1913	5,702	4,160
1914	4,078	2,416
1915	409	441
1916	610	789
1917	.....	.....
1918	2,004	2,512
1919	661	943
1920	1,437	2,211
1921	20	30
1922	972	1,026
1923	616	861
1924	369	324
1925	2,930	1,913
1926	920	571
1927	275	135
1928	1,002	706

Oil, Fish, Not Specially Provided For

	Gallons.	Dollars.
1901	494,036	122,360
1913	519,121	152,803
1914	517,562	154,775
1915	439,741	106,739
1916	720,063	235,536
1917	2,280,013	863,059
1918	1,532,512	772,721
1919	1,263,374	1,019,195
1920	547,545	403,545
1921	324,646	166,792
1922	285,605	67,648
1923	733,112	225,607
1924	121,802	41,281
1925	165,373	51,076
1926	124,800	46,192
1927	62,303	21,971
1928	215,668	62,660

Oil, Fusel

	Pounds.	Dollars.
1871	3,500	2,063
1881	961	290
1891	345,001	16,780
1901	2,572,343	139,190
1913	5,116,660	1,183,872
1914	5,679,901	888,869
1915	3,298,228	699,512
1916	2,162,617	695,196
1917	1,814,507	629,414
1918	1,706,528	546,589
1919	1,464,500	386,416
1920	6,192,079	1,199,995
1921	1,083,336	274,423
1922	552,036	101,636
1923	2,479,194	610,536
1924	1,651,727	741,735
1925	806,091	141,028
1926	116,612	32,343
1927	635,291	90,553
1928	131,432	20,974

Includes Amyl and Butyl Alcohol prior to 1924

Oil, Geranium

	Pounds.	Dollars.
1924	105,770	591,237
1925	153,511	870,219
1926	232,085	667,639
1927	230,183	643,615
1928	164,401	463,000

Oil, Hempseed

	*Pounds.	Dollars.
1881	10,615	6,751
1891	140,163	66,744
1901	528,763	254,216
1913	.....	.....
1914	375	123
1915	.....	.....
1916	10	5
1917	.....	.....
1918	25,000	21,654
1919	162,131	152,365
1920	161,346	157,596
1921	20,868	23,532
1922	16,000	7,567
1923	.....	.....
1924	38,000	2,966
1925	.....	.....
1926	1,650	99
1927	152,080	11,366
1928	.....	.....

*Quantity stated in gallons prior to 1924.

Oil, Herring, Menhaden and Sod

	Gallons.	Dollars.
1924	534,476	182,607
1925	288,713	115,006
1926	1,089,731	445,175
1927	2,927,161	1,019,108
1928	6,233,603	2,018,675

Oil, Jasmine

	Pounds.	Dollars.
1881	.....	1,629
1891	441	283
1901	1,097	3,705
1913	3,416	39,554
1914	611	14,360
1915	261	5,160
1916	978	27,592
1917	348	8,366
1918	5,840	89,310
1919	12,227	204,006
1920	3,888	145,641
1921	2,115	110,957
1922	622	16,413
1923	207	10,668
1924	11	297
1925	.....	.....
1926	16	98
1927	10	261
1928	.....	.....

Oil, Juniper

	Pounds.	Dollars.
1871	7,672	4,758
1881	7,073	4,147
1891	5,798	2,778
1901	13,155	5,226
1913	17,356	13,037
1914	14,545	8,691
1915	10,388	7,637
1916	975	1,988
1917	4,661	21,514
1918	21,346	67,147
1919	1,146	6,758
1920	8,885	37,019
1921	12,546	39,000
1922	15,612	20,293
1923	20,204	20,188
1924	17,802	16,634
1925	13,976	18,999
1926	10,958	16,166
1927	9,305	18,737
1928	10,830	22,557

Oil, Lard

	Pounds.	Dollars.
1928	4,970	827

Oil, Lavender and Spike Lavender

	Pounds.	Dollars.
1881	38,167	58,100
1891	92,224	102,819
1901	102,402	101,329
1913	227,013	482,779
1914	64,541	100,481
1915	72,989	133,375
1916	198,205	271,815
1917	144,663	237,061
1918	122,958	273,466
1919	111,411	240,823
1920	178,878	364,865
1921	84,626	133,488
1922	163,500	260,590
1923	178,581	271,392
1924	173,635	411,102
1925	209,579	743,365
1926	194,761	627,493

Stated separately after 1926.

Oil, Lavender

	Pounds.	Dollars.
1927	154,216	583,663
1928	216,083	775,328

Oil, Lemon and Orange

	Pounds.	Dollars.
1871	67,619	144,405
1881	88,480	181,495

Stated separately after 1881.

Oil, Lemon (Including Terpenless)

	Pounds.	Dollars.
1891	151,460	225,755
1901	268,341	231,041
1913	410,003	794,215
1914	329,440	752,714
1915	561,387	630,338
1916	435,030	360,862
1917	557,288	459,179
1918	577,600	452,681
1919	345,799	327,370
1920	769,488	917,214
1921	543,489	559,970
1922	684,118	574,084
1923	592,089	402,427
1924	453,572	278,210
1925	580,169	416,597
1926	436,095	770,682
1927	422,398	789,126
1928	506,363	938,669

Oil, Lignaloe or Bois de Rose

	Pounds.	Dollars.
1924	59,495	164,321
1925	52,843	178,800
1926	80,555	206,078
1927	87,743	154,874
1928	111,340	174,312

Oil, Lime

	*Pounds.	Dollars.
1891	3,681	4,063
1901	5,904	5,980
1913	13,075	15,025
1914	16,559	23,828
1915	9,154	9,279
1916	19,765	29,694
1917	26,551	49,001
1918	29,137	73,685
1919	16,272	24,273
1920	61,824	87,873
1921	51,266	101,928
1922	27,200	24,343
1923	59,072	33,017
1924	40,857	36,448
1925	65,366	84,015
1926	40,749	126,335
1927	48,431	330,225
1928	33,090	212,884

Oil, Linseed, Raw, Boiled or Oxidized

	*Pounds.	Dollars.
1871	39,424	24,806
1881	9,682	4,711
1891	11,629	5,828
1901	14,036	7,598
1913	172,522	110,840
1914	187,983	91,544
1915	537,810	249,611
1916	56,899	36,399
1917	110,809	76,530
1918	51,271	34,370
1919	937,573	1,190,911
1920	4,562,008	6,583,515
1921	1,996,250	1,905,330
1922	22,463,851	11,957,084
1923	10,731,809	5,045,874
1924	17,536,378	1,843,671
1925	23,958,301	2,199,418
1926	10,419,769	787,167
1927	3,816,437	268,330
1928	4,414,665	296,139

* Quantity stated in gallons prior to 1924.

Oil, Mace

	Pounds.	Dollars.
1871	187	160
1881	355	321
1891	805	613
1901	685	440
1913	5,737	2,611
1914	2,652	1,380
1915	4,776	2,605
1916	3,400	2,224
1917	3,000	2,414
1918	.....	.....
1919	.....	.....
1920	200	468
1921	.....	.....
1922	215	251
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Imports Into the United States

Oil, Mineral, Crude, Petroleum

	*Barrels (42 gallons).	Dollars.
1871	356	102
1881	694	160
1891	.....	214
1901	118	17
1913	450,542,222	7,608,796
1914	843,080,788	11,779,938
1915	653,757,824	8,918,138
1916	859,736,962	12,226,179
1917	1,036,417,009	14,181,349
1918	1,348,419,493	18,239,207
1919	1,929,339,105	24,166,677
1920	2,824,332,765	33,791,375
1921	5,609,224,120	71,030,595
1922	4,710,620,839	72,960,648
1923	3,794,928,580	54,336,992
1924	3,557,189,072	65,293,250
1925	2,986,267,915	80,530,742
1926	2,408,796,807	72,079,930
1927	54,752,398	75,933,473
1928	70,577,338	88,608,193

*Quantity stated in gallons prior to 1927.

Oil, Mineral, Lubricating, Including Paraffin Oil

	*Barrels (42 gallons).	Dollars.
1913	116,192	35,198
1914	167,384	55,923
1915	60,412	11,609
1916	774,250	149,626
1917	409,746	40,710
1918	24,628	7,502
1919	551,142	75,451
1920	819,111	161,792
1921	4,344	3,792
1922	429,861	53,744
1923	2,517,850	456,870
1924	844,361	141,396
1925	1,247,983	206,091
1926	1,455,167	280,184
1927	35,447	142,724
1928	9,440	125,582

*Quantity stated in gallons prior to 1927.

Oil, Mineral, Medicinal

	Pounds.	Dollars.
1924	171,009	32,956
1925	187,988	30,812
1926	129,332	17,575
1927	1,797,438	132,038
1928	1,652,773	128,457

Oil, Mineral, Refined, Benzin

	Gallons.	Dollars.
1913	14,162,423	1,266,896
1914	16,152,167	1,399,630
1915	6,783,627	727,855
1916	5,100	2,150

Not stated after 1916.

Oil, Mineral, Refined, Gasoline and Naphtha

	Gallons.	Dollars.
1913	570	118
1914	14,175	1,992
1915	1,136,797	34,701
1916	2,638	458

Not stated after 1916.

Oil, Mineral, Refined Benzin, Gasoline and Naphtha

	Gallons.	Dollars.
1917	10,744,592	1,396,101
1918	11,069,898	1,473,027
1919	11,760,856	1,867,863
1920	25,637,592	3,147,635
1921	31,778,815	3,711,948
1922	69,319,919	5,607,943
1923	87,801,664	7,176,506

See following classes:—

Oil, Mineral, Petroleum, Topped, Including Fuel Oil

	*Barrels (42 gallons).	
1924	389,363,276	9,311,001
1925	568,050,193	15,421,740
1926	518,938,987	14,858,089
1927	11,383,660	13,261,868
1928	7,897,701	9,710,072

*Quantity stated in gallons prior to 1927.

Oil, Mineral, Petroleum, Tops and Other Unfinished Distillates

	*Barrels (42 gallons).	Dollars.
1924	8,357,667	610,090
1925	19,889,081	1,293,396
1926	6,813,240	460,627
1927	464,449	1,501,226
1928	46,299	149,681

*Quantity stated in gallons prior to 1927.

Oil, Mineral, Petroleum, Gasoline, Naphtha, and Other Finished Light Products

	*Barrels (42 gallons).	Dollars.
1924	195,270,153	16,006,282
1925	155,496,561	15,298,811
1926	195,366,990	19,562,123
1927	4,997,328	26,575,012
1928	4,362,102	24,203,335

*Quantity stated in gallons prior to 1927.

Oil, Mineral, Petroleum Illuminating (Kerosene)

	*Barrels (42 gallons).	Dollars.
1924	275,711	43,941
1925	630,964	95,579
1926	811,291	118,643
1927	73,076	243,872
1928	153,491	614,941

*Quantity stated in gallons prior to 1927.

Oil, Mineral, Refined, All Other

	Gallons.	Dollars.
1871	152	176
1881	21	7
1891	826,801	34,098
1901	24,532	5,897
1913	1,464,412	307,479
1914	1,796,093	430,664
1915	496,968	98,698
1916	1,727,683	134,815
1917	32,259,588	2,221,816
1918	43,927,718	2,406,764
1919	37,299,989	2,585,007
1920	59,040,338	3,945,468
1921	97,728,455	7,138,982
1922	112,073,487	7,179,162
1923	589,175,654	13,928,891

Included in foregoing classes after 1923.

Oil, Neroli or Orange Flower

	Pounds.	Dollars.
1891	2,757	51,984
1901	4,319	41,922
1913	38,355	171,962
1914	15,928	73,265
1915	13,251	81,478
1916	34,447	66,766
1917	26,630	66,394
1918	32,687	72,370
1919	10,595	52,956
1920	49,835	214,919
1921	22,780	95,207
1922	29,945	61,840
1926	6,551	81,502
1926	1,305	52,976
1925	695	21,216
1926	345	28,561
1927	1,045	74,510
1928	635	78,845

Oil, Olive (for Manufacturing Purposes Only)

	*Pounds.	Dollars.
1871	139,051	111,450
1881	172,030	112,916
1891	503,947	242,860
1901	1,303,474	530,607
1913	725,100	483,320
1914	799,200	503,006
1915	717,361	498,689
1916	919,638	711,406
1917	787,348	736,520
1918	166,115	148,673
1919	119,842	135,767
1920	265,835	404,561
1921	261,689	267,579
1922	1,037,021	604,929
1923	5,417,706	3,336,606
1924	8,483,560	1,800,917
1925	9,406,195	1,094,574

* Quantity stated in gallons prior to 1924. Stated separately after 1925.

Oil, Clive, Edible

	*Pounds.	Dollars.
1871	142,476	257,868
1881	216,788	380,428
1891	600,936	731,006
1901	991,799	1,180,443
1913	4,772,775	6,227,536
1914	6,391,827	8,201,881
1915	6,622,246	8,119,512
1916	6,924,606	9,324,361
1917	7,707,094	10,769,754
1918	2,562,538	2,935,497
1919	4,071,766	7,573,551
1920	6,640,601	14,887,944
1921	4,685,204	12,214,272
1922	7,432,164	11,621,248
1923	76,701,825	12,291,905
1924	78,390,666	12,578,005
1925	81,324,993	13,983,787
1926	83,710,811	15,750,096
1927	86,688,172	17,378,809
1928	71,394,044	14,640,472

* Quantity stated in gallons prior to 1923.

Oil, Olive, Inedible, Sulphured or Foots

	Pounds.	Dollars.
1926	45,159,425	3,522,677
1927	40,433,655	3,462,582
1928	39,423,156	3,164,954

Oil, Olive, Inedible, All Other

	Pounds.	Dollars.
1926	10,903,542	1,355,411
1927	6,965,374	1,083,677
1928	9,706,039	1,448,099

Oil, Orange (Including Terpenless)

	Pounds.	Dollars.
1891	27,952	44,500
1901	72,218	109,832
1913	77,797	155,299
1914	104,491	222,118
1915	97,014	140,246
1916	97,359	134,025
1917	170,722	322,373
1918	196,846	330,507
1919	126,532	246,202
1920	282,349	953,514
1921	155,765	543,098
1922	210,034	558,374
1923	226,116	487,839
1924	192,223	435,703
1925	228,814	512,209
1926	220,737	520,245
1927	197,150	459,718
1928	205,794	569,496

Oil, Oleo

	Pounds.	Dollars.
1927	395	49
1928	1,330,210	129,305

Oil, Origanum

	Pounds.	Dollars.
1871	33,612	17,526
1881	31,398	14,979
1891	.....	.....
1901	10,305	2,205
1913	8,822	8,502
1914	507	650
1915	14,349	15,111
1916	24,222	24,291
1917	54,671	45,859
1918	3,851	3,424
1919	2,637	5,506
1920	11,522	23,206
1921	8,950	16,438
1922	.....	.....
1923	5,900	9,774
1924	47,176	59,047
1925	102,013	120,504
1926	42,578	55,834
1927	31,289	33,959
1928	42,044	45,827

Oil, Orris

	Pounds.	Dollars.
1924	2,399	6,052
1925	107	4,194
1926	122	4,189
1927	366	13,243
1928	396	16,861

Oil, Palm

	Pounds.	Dollars.
1881	9,325,090	309,355
1891	3,507,223	135,879
1901	8,081,252	419,466
1913	48,442,662	3,368,815
1914	61,753,482	4,118,077
1915	31,482,292	2,024,827
1916	40,621,318	2,918,523
1917	36,074,059	3,316,417
1918	27,408,494	2,527,872
1919	19,280,762	1,651,230
1920	50,165,387	6,529,094
1921	31,076,224	2,765,953
1922	39,159,342	2,420,742
1923	78,815,952	8,586,201
1924	86,794,400	5,733,281
1925	114,387,981	8,778,673
1926	152,254,206	11,982,782
1927	111,183,687	8,123,908
1928	187,115,781	12,360,176

Oil, Palm Kernel

	Pounds.	Dollars.
1913	23,570,152	1,850,270
1914	30,588,958	2,826,972
1915	4,908,702	446,979
1916	6,273,840	479,738
1917	1,857,038	197,237
1918	18,018	2,583
1919	1,945,345	144,826
1920	53,508	9,900
1921	2,769,144	316,754
1922	2 489,490	209,551
1923	2,858,108	237,594
1924	1,768,704	148,335
1925	37,364,493	2,266,783
1926	85,074,356	8,017,700
1927	21,435,908	1,329,332
1928	56,021,293	4,586,522

Oil, Palmarosa

	Pounds.	Dollars.
1924	2,471	9,020
1925	5,820	19,697
1926	3,038	9,115
1927	6,400	14,163
1928	7,000	14,470

Oil, Patchouli

	Pounds.	Dollars.
1924	2,561	13,334
1925	3,617	12,905
1926	6,313	22,933
1927	3,505	18,251
1928	3,246	18,566

Oil, Peanut

	*Pounds.	Dollars.
1913	1,221,676	820,359
1914	1,332,108	915,439
1915	830,638	565,707
1916	1,466,043	824,327
1917	3,018,468	2,028,096
1918	8,279,927	7,296,214
1919	11,393,615	11,493,969
1920	22,025,653	27,752,099
1921	2,444,794	2,347,980
1922	375,819	314,989
1923	4,401,071	453,035
1924	4,981,923	499,105
1925	2,910,137	342,959
1926	3,259,682	416,304
1927	5,686,792	603,342
1928	2,308,666	291,011

* Quantity stated in gallons prior to 1923.

Oil, Peppermint

	Pounds.	Dollars.
1891	3,049	3,918
1901	1,201	1,353
1913	3,529	13,097
1914	18,794	41,367
1915	9,200	8,959
1916	17,066	12,573
1917	23,159	37,734
1918	29,360	29,953
1919	118,741	139,466
1920	148,227	270,333
1921	28,732	31,596
1922	6,648	9,827
1923	1,523	5,468
1924	96	277
1925	7,891	46,940
1926	32,433	269,606
1927	1,031	6,940
1928	677	3,792

Oil, Perilla

	Pounds.	Dollars.
1913	.....	.....
1914	117,893	6,090
1915	69,174	5,485
1916	65,509	5,504
1917	442,619	39,276
1918	1,015,953	105,723
1919	1,430,163	201,412
1920	8,107,141	1,376,738
1921	3,783,757	466,504
1922	1,899,352	155,605
1923	6,652,224	734,193
1924	2,933,388	301,494
1925	6,198,815	776,736
1926	6,859,904	819,792
1927	4,711,685	469,620
1928	2,289,450	263,132

Oil, Petitgrain

	Pounds.	Dollars.
1924	40,179	64,510
1925	27,759	53,522
1926	52,178	88,198
1927	57,781	85,463
1928	48,590	69,095

Oil, Pine Needle

	Pounds.	Dollars.
1924	15,826	9,028
1925	16,745	3,480
1926	29,445	5,398
1927	7,650	2,506
1928	31,704	15,528

Oil, Poppy Seed, Raw, Boiled or Oxidizer'

	*Pounds.	Dollars.
1881	.....	1,279
1891	7,604	4,627
1901	3,125	2,388
1913	9 605	7,788
1914	7,973	6,422
1915	11,645	7,072
1916	6,337	6,816
1917	2,789	3,734
1918	20	112
1919	1,296	1,952
1920	422	1,451
1921	1,051	2,420
1922	1,691	1,754
1923	599	1,227
1924	17,993	2,253
1925	51,808	7,516
1926	86,349	10,133
1927	135,737	17,015
1928	36,718	6,594

*Quantity stated in gallons prior to 1924.

Oil, Rape (Colza)

	Gallons.	Dollars.
1881	.....	.....
1891	577,684	13,390
1901	.....	.....
1913	1,564,659	784,750
1914	1,463,099	704,747
1915	1,491,995	784,235
1916	2,534,679	1,414,022
1917	1,095,391	651,314
1918	2,751,875	2,697,152
1919	2,091,052	2,264,504
1920	1,229,526	1,525,747
1921	1,171,950	1,108,134
1922	1,351,827	929,370
1923	1,769,831	1,235,969
1924	2,066,513	1,364,466
1925	1,789,438	1,513,183
1926	2,097,042	1,618,523
1927	2,730,700	1,906,179
1928	2,140,503	1,646,690

Oil, Rosemary

	Pounds.	Dollars.
1881	.....	6,597
1801	64,361	33,340
1901	31,283	14,723
1913	284,144	100,930
1914	85,243	30,177
1915	93,663	44,636
1916	95,815	30,544
1917	228,080	71,035
1918	204,105	71,541
1919	51,146	36,101
1920	309,210	228,749
1921	44,848	35,001
1922	159,250	63,756
1923	234,591	99,078
1924	143,603	51,067
1925	204,944	76,443
1926	106,622	50,731
1927	92,459	61,045
1928	85,508	37,357

Oil, Roses (Otto of)

	Ounces.	Dollars.
1871	10,146	46,242
1881	13,168	75,130
1891	43,599	188,612
1901	45,482	192,874
1913	133,325	791,370
1914	40,454	301,066
1915	60,011	252,592
1916	40,887	169,744
1917	11,235	85,673
1918	22,653	89,049
1919	24,827	210,925
1920	80,094	657,690
1921	36,886	263,980
1922	27,700	190,923
1923	169,878	487,154
1924	66,223	331,052
1925	35,601	276,929
1926	46,015	305,020
1927	36,178	385,260
1928	30,542	342,743

Oil, Rosewood

	Pounds.	Dollars.
1927	218	582
1928	2	6

Oil, Sandalwood

	Pounds.	Dollars.
1924	53,084	251,835
1925	43,611	206,093
1926	7,774	29,197
1927	5,367	14,671
1928	7,619	25,254

Oil, Seal

	Gallons.	Dollars.
1871	188,076	100,664
1881	180	72
1891	250	97
1901	1,294	458
1913	8,972	3,131
1914	179,734	64,968
1915	479,571	166,336
1916	510,002	271,979
1917	518,657	301,138
1918	148,262	100,328
1919	588,553	612,241
1920	27,951	25,101
1921	107,802	29,726
1922	316,394	88,092
1923	466,147	188,047
1924	595,878	268,820
1925	602,595	297,219
1926	338,545	166,202
1927	653,632	387,655
1928	436,084	175,292

Oil, Sesame

	Pounds.	Dollars.
1871	6,012	427
1881	540,520	40,519
1891	323,091	22,064
1901	626,189	48,637
1913	1,936,647	156,442
1914	1,389,649	118,075
1915	341,545	28,653
1916	257,874	22,208
1917	76,057	11,874
1918	346,211	51,178
1919	2,335,196	357,564
1920	5,237,695	804,529
1921	79,274	15,493
1922	55,182	10,877
1923	7,539,950	846,840
1924	5,060,347	539,228
1925	6,430,660	766,008
1926	4,567,030	533,990
1927	7,067,668	829,659
1928	3,341,402	381,155

Oil, Soya Bean

	Pounds.	Dollars.
1913	12,440,406	635,882
1914	16,363,645	830,870
1915	19,210,028	901,643
1916	98,171,275	5,131,582
1917	162,734,010	11,410,606
1918	356,999,648	32,856,034
1919	244,104,906	28,878,540
1920	196,106,919	25,280,085
1921	49,843,640	3,901,747
1922	3,804,130	152,975
1923	22,818,945	2,017,517
1924	18,714,151	1,323,866
1925	16,064,064	1,247,116
1926	15,649,822	1,151,424
1927	19,783,463	1,336,606
1928	14,557,885	870,398

Oil, Spike Lavender

	Pounds.	Dollars.
1927	103,446	104,055
1928	85,460	70,339

Oil, Stearin, Palm, Etc., for Candle Makers' Use

	Pounds.	Dollars.
1924	872,344	18,432
1925	81,448	4,961
1926	5,617	221
1927	76,613	3,072
1928	23,075	2,201

Oil, Thyme

	Pounds.	Dollars.
1871	725	737
1881	30,401	16,023
1891	49,487	20,549
1901	87,634	29,729
1913	138,972	105,296
1914	89,148	63,864
1915	99,580	83,498
1916	92,097	85,913
1917	91,163	90,868
1918	206,185	242,254
1919	98,324	135,914
1920	102,973	179,370
1921	81,327	116,595
1922	156,906	207,626
1923	134,568	173,455
1924	168,954	144,631
1925	92,411	65,008
1926	80,706	62,488
1927	97,370	59,650
1928	81,211	62,576

Imports Into the United States

Oil, Valerian

	Pounds.	Dollars.
1871	51	288
1881	117	690
1891	.....	.....
1901	61	148
1913	40	124
1914	6	12
1915	15	36
1916	.....	.....
1917	.....	.....
1918	566	3,690
1919	.....	.....
1920	57	328
1921	.....	.....
1922	40	110
1923	40	110
1928	1,118	8,257
1924	25	111
1925	54	612
1926	70	396
1927	10	52
1928	.....	.....

Oil, Vetiver

	Pounds.	Dollars.
1927	2,581	22,291
1928	12,281	58,680

Oil, Whale

	Gallons.	Dollars.
1871	146,797	82,758
1881	65,100	22,915
1891	51,005	14,813
1901	1,822	811
1913	1,166,339	278,208
*1914	82,756	26,553

* July 1 to October 3, 1913. Stated separately after October 3, 1923. Includes Sperm Oil Prior to October 3, 1913.

Oil, Whale, Sperm

	Gallons.	Dollars.
1914	157,142	66,652
1915	92,033	38,612
1916	59,816	25,191
1917	48,178	37,512
1918	60,328	70,229
1919	99,347	120,416
1920	124,183	102,128
1921	1,739	637
1922	24,720	13,594
1923	149,106	80,225
1924	32,396	17,922
1925	103,306	51,067
1926	314,099	117,527
1927	178,278	59,369
1928	360,600	139,255

Oil, Whale, All Other

	Gallons.	Dollars.
1914	290,745	94,424
1915	604,503	215,644
1916	230,762	79,589
1917	415,163	234,097
1918	1,134,021	574,907
1919	156,915	133,998
1920	508,770	625,590
1921	306,917	113,12(
1922	4,298,822	2,520,26(
1923	3,587,883	1,895,664
1924	4,709,013	2,301,760
1925	6,338,206	4,036,813
1926	3,508,307	1,825,338
1927	6,059,409	2,847,296
1928	6,337,600	3,006,606

Oils and Fats Changed by Vulcanizing, Oxidizing or Other Chemical Process

	Pounds.	Dollars.
1928	246,810	9,893

Oils and Fats, Hydrogenated or Hardened

	Pounds.	Dollars.
1926	91,420	14,484
1927	213,938	34,615
1928	88,815	16,023

Oleo Stearin

	Pounds.	Dollars
1913	9,540,347	967,000
1914	5,679,535	497,973
1915	2,644,460	226,661
1916	910,478	81,280
1917	1,113,277	114,640
1918	6,375,579	1,118,413
1919	1,601,874	314,306
1920	1,307,847	274,545
1921	842,908	92,279
1922	878,222	82,596
1923	40,126	3,965
1924	209,308	20,439
1925	1,529,959	167,390
1926	1,273,746	137,631
1927	1,031,464	118,865
1928	3,037,602	272,942

Olive Nuts, Ground

	Pounds.	Dollars.
1928	10,000	320

Opium, Aqueous Extract of, and Tinctures of, as Laudanum, Etc.

	Ounces.	Dollars.
1891	.....	219
1901	.....	660
1913	.....	671
1914	.....	5,279
1915	.....	5,565
1916	.....	6
1917	.....	222
1918	.....	.....
1919	.....	70
1920	.....	46
1921	.....	976
1922	.....	1,216
1923	.....	1,027

No imports allowed after 1923.

Opium, Containing 8.5% and Over of Anhydrous Morphine, Crude

	Pounds.	Dollars.
1871	158,620	918,974
1881	385,059	1,791,415
1891	621,749	1,582,461
1901	491,448	1,030,209
1913	441,277	2,130,154
1914	441,621	1,731,886
1915	353,006	1,699,217
1916	117,870	533,183
1917	43,016	330,652
1918	21,341	265,288
1919	74,264	577,596
1920	420,976	4,539,455
1921	78,842	428,188
1922	149,146	408,993
1923	113,730	365,441
1924	79,722	398,700
1925	91,065	805,777
1926	104,414	673,467
1927	148,239	1,013,704
1928	134,211	979,187

Opium, Dried

	Pounds.	Dollars.
1871	37,825	353,334
1881	76,446	761,349
1891	61,341	453,360
1901	139,519	1,141,518
1913	49,071	389,864
1914	32,095	205,684
1915	38,977	308,928
1916	44,052	343,790
1917	77,990	640,563
1918	98,498	1,514,127
1919	101,998	1,776,787
1920	1,672	14,433
1921	149	436
1922	1,525	5,880
1923	1,890	9,177

No imports allowed after 1923.

Opium, All Other Alkaloids and Salts and Esters

	Ounces.	Dollars.
1871	.....	89
1881	97	15
1891	.....	.....
1901	.....	.....
1913	9,672	28,587
1914	11,593	64,528
1915	8,626	49,584
1916	2,360	9,981
1917	34,179	165,028
1918	20,479	126,882
1919	56,895	318,361
1920	28,793	155,979
1921	573	1,315
1922	4,625	17,646
1923	200	961

No imports allowed after 1923.

Orange Mineral

	Pounds.	Dollars.
1891	1,827,569	87,405
1901	869,251	50,587
1913	287,535	18,595
1914	362,963	24,692
1915	166,202	12,279
1916	108,275	10,589
1917	54,834	7,852
1918	9,506	1,407
1919	.....	.....
1920	62,534	6,147
1921	99,340	10,987
1922	66,727	5,901
1923	134,105	10,680
1924	86,677	6,587
1925	83,709	8,109
1926	40,144	4,067
1927	68,967	5,536
1928	33,866	2,434

Orchil, or Orchil Liquid

	Pounds.	Dollars.
1871	.....	3,942
1881	.....	.....
1891	.....	81,974
1901	.....	31,937
1913	.....	27,386
1914	.....	21,589
1915	.....	37,802
1916	.....	114,603
1917	.....	98,905
1918	.....	55,612
1919	259,124	30,651
1920	634,570	63,380
1921	520,275	77,409
1922	424,398	56,030

Included in "Cudbear, etc.," after 1922.

Orris, or Iris, Root

	Pounds.	Dollars.
1881	108,132	11,199
1891	230,448	25,376
1901	301,220	15,605
1913	357,963	37,326
1914	580,484	71,941
1915	554,125	52,893
1916	602,289	62,552
1917	527,539	61,494
1918	465,960	55,728
1919	406,273	68,956
1920	1,334,628	146,921
1921	235,522	17,602
1922	559,352	28,725
1923	585,905	29,760
1924	638,767	27,426
1925	540,549	30,546
1926	570,260	34,106
1927	546,656	32,391
1928	645,538	45,758

Osmiridium

	Ounces, troy.	Dollars.
1914	666	43,659
1915	911	58,014
1916	202	9,654
1917	333	24,293
1918	158	16,015
1919	899	77,347
1920	2,814	302,070
1921	3,619	365,245
1922	2,735	273,401
1923	1,383	171,091
1924	1,416	177,994
1925	2,557	324,371
1926	4,293	634,779
1927	6,290	373,897
1928	6,040	335,525

Osmium

	Ounces, troy.	Dollars
1919	1,957	119,328
1920	624	29,921
1921	351	23,275
1922	608	46,153
1923	1,087	104,127
1924	1,151	110,111
1925	877	99,141
1926	877	85,498
1927	297	21,084
1928	59	3,427

Oxgall, Bile Salts and Bile Compounds

	Pounds.	Dollars
1924	299	469
1925	209	511
1926	95	289
1927	.....	.....
1928	14	22

Paints, Enamel

	Pounds.	Dollars.
1913	59,457	11,877
1914	96,174	17,316
1915	86,078	6,504
1916	54,546	3,987
1917	118,571	13,902
1918	2,470	336
1919	1,908	2,841
1920	22,268	11,540
1921	52,009	20,244
1922	57,795	17,249
1923	49,886	12,408
1924	151,941	32,481
1925	115,358	21,046
1926	140,289	27,990
1927	251,212	43,178
1928	232,033	42,422

Palladium

	Ounces, troy.	Dollars.
1901	.....	1,455
1914	5,986	169,171
1915	40	2,779
1916	8,011	304,559
1917	1,663	95,331
1918	1,317	148,938
1919	2,020	77,942
1920	6,518	599,471
1921	5,817	424,472
1922	12,165	639,976
1923	12,339	697,854
1924	12,918	768,514
1925	8,161	487,445
1926	8,412	495,897
1927	5,691	309,252
1928	11,382	373,815

Palm and Palm Nut Kernels

	Pounds.	Dollars.
1881	.....	819
1891	.....	1,278
1901	.....	.....
1913	.....	4,872
1914	.....	23,127
1915	.....	31,900
1916	.....	1,104,885
1917	.....	626,435
1918	.....	338,778
1919	19,590,551	539,708
1920	6,758,218	420,949
1921	4,545,057	217,080
1922	302,776	20,106
1923	797,806	58,370
1924	30,030	4,382
1925	46,088	6,247
1926	207,364	17,612
1927	266,072	23,437
1928	199,303	26,643

Paprika, Unground

	Pounds.	Dollars.
1928	110,121	14,827
1926	137,346	20,068
1927	17,903	3,437

Not stated separately after 1927.

Paprika, Ground

	Pounds.	Dollars.
1925	2,258,100	348,641
1926	4,281,810	730,374
1927	4,761,719	1,054,373
1928	5,331,662	1,004,878

Paracetaldehyde or Paraldehyde

	Pounds	Dollars
1924	469,720	81,119
1925	787,928	137,429
1926	494,223	71,329
1927	27,262	5,124
1928	13,449	2,611

Paraffin and Paraffin Wax

(Not including oil.)

	Pounds.	Dollars.
1891	62,439	4,880
1901	263,251	13,484
1913	11,521,205	503,802
1914	7,501,463	327,402
1915	5,624,811	254,380
1916	8,526,929	418,262
1917	10,641,404	654,186
1918	8,881,023	656,474
1919	6,600,404	754,351
1920	8,687,728	820,299
1921	5,714,653	630,575
1922	5,654,930	230,862
1923	11,935,679	476,184
1924	9,959,264	484,501
1925	16,554,535	950,253
1926	9,572,545	668,229
1927	12,607,931	819,539
1928	25,188,769	1,370,580

Paraformaldehyde or Solid Formaldehyde

	Pounds.	Dollars.
1925	34,816	5,929
1926	5	10
1927	500	141
1928	34,368	8,050

Paris Green and London Purple

	Pounds.	Dollars.
1901	311,753	6,229
1913	165,820	7,492
1914	33,373	3,572
1915	16,800	2,975
1916	31,917	8,163
1917	.....	.....
1918	48	180
1919	18	14
1920	.....	.....
1921	992	372
1922	1,787	316
1923	102,429	20,912
1924	74,577	15,268
1925	2,595	771
1926	7,230	1,478
1927	22	6
1928	5,457	245

Papaw Juice or Crude Papain

	Pounds.	Dollars.
1927	25,533	90,365
1928	94,454	272,909

Peanuts, Unshelled

	Pounds	Dollars.
1871	5,139,877	128,318
1881	40,338	724
1891	304,335	6,553
1901	738,718	18,762
1913	12,140,612	459,003
1914	17,308,778	655,448
1915	15,075,387	490,693
1916	9,623,411	353,790
1917	7,710,082	330,769
1918	3,096,678	152,313
1919	1,304,409	92,291
1920	9,786,906	792,084
1921	5,968,952	466,224
1922	2,584,829	139,223
1923	4,177,730	178,142
1924	2,861,407	123,295
1925	8,296,607	373,373
1926	4,869,643	245,158
1927	3,785,929	157,189
1928	9,759,014	426,661

Peanuts, Shelled

	Pounds.	Dollars.
1871	720,962	25,560
1881	5,751	432
1891	148,350	18,313
1901	55,621	1,968
1913	7,823,173	425,158
1914	21,819,101	987,499
1915	11,696,507	445,143
1916	19,739,388	740,276
1917	27,548,928	1,200,306
1918	70,947,036	4,358,197
1919	15,855,266	1,086,115
1920	102,285,543	9,534,498
1921	56,137,230	3,543,412
1922	5,748,982	259,432
1923	27,850,932	1,367,598
1924	45,891,345	2,057,694
1925	85,255,489	3,176,697
1926	36,570,573	1,960,643
1927	39,174,857	1,793,904
1928	35,562,107	1,856,605

Pepper, Black and White, Ground

	Pounds.	Dollars.
1928	2,751	1,431

Pepper, Black and White, Unground

	Pounds.	Dollars.
1871	6,895,551	485,635
1881	8,661,633	741,119
1891	13,871,442	1,372,818
1901	15,022,896	1,752,167
1913	27,568,317	2,855,184
1914	21,309,875	2,179,995
1915	26,625,992	2,685,522
1916	32,174,546	3,789,486
1917	26,586,256	4,035,410
1918	32,132,953	4,928,582
1919	22,493,585	3,590,072
1920	27,736,965	4,693,669
1921	24,593,628	2,819,951
1922	25,855,510	2,532,304
1923	30,367,210	2,206,657

Stated separately after 1923.

Pepper, Black, Unground

	Pounds.	Dollars.
1924	21,217,723	1,479,336
1925	27,191,384	2,399,470
1926	22,986,475	3,468,491
1927	18,289,315	3,642,706
1928	20,704,289	5,955,117

Pepper, White, Unground

	Pounds.	Dollars.
1924	4,631,121	519,978
1925	6,063,512	939,633
1926	4,992,747	1,125,531
1927	4,440,197	1,551,887
1928	4,332,075	1,627,200

Pepper, Capsicum, Red or Cayenne, Ground

	Pounds.	Dollars.
1871	1,376	603
1881	25,353	3,529
1891	.....	.....
1901	.....	.....
1914	1,322,308	165,807
1915	1,827,666	207,879
1916	2,235,154	271,244
1917	3,636,876	455,897
1918	1,891,744	280,071
1919	2,112,371	626,188
1920	2,399,677	941,418
1921	2,537,883	624,078
1922	3,211,432	471,426
1923	3,896,586	560,296
1924	3,268,056	561,530
1925	2,064,956	354,332
1926	220,719	36,662
1927	15,541	3,200

Not stated separately after 1927.

Pepper, Capsicum, Red or Cayenne (Including Chili), Unground

	Pounds.	Dollars
1871	140,936	9,241
1881	66,834	8,414
1891	2,302,326	123,092
1901	2,038,777	143,137
1914	6,522,463	711,966
1915	3,093,232	332,616
1916	4,354,041	477,044
1917	4,734,381	47,343
1918	2,712,857	315,481
1919	1,950,920	224,294
1920	2,758,307	379,228
1921	2,683,311	391,199
1922	2,380,769	315,833
1923	6,032,008	703,889
1924	4,380,308	672,838
1925	3,181,060	410,010
1926	2,467,666	273,284
1927	2,418,298	274,355
1928	2,477,316	410,459

Pepsin and Other Enzyme Preparations, Medicinal, N. E. S.

	Pounds.	Dollars.
1924	2,004	19
1925	354	1,604
1926	18	9
1927	220	597
1928	146	1,013

Perfumery, Etc., Containing Alcohol

	Pounds.	Dollars.
1871	.....	272,302
1881	.....	461,592
1891	.....	258,332
1901	.....	594,282
1913	286,025	819,685
1914	301,443	771,758
1915	240,075	689,930
1916	281,387	828,727
1917	359,209	1,085,369
1918	267,733	1,014,647
1919	221,041	911,014
1920	1,620,601	3,533,172
1921	1,774,025	3,839,951
1922	566,365	2,339,280
1923	635,312	2,086,899
1924	374,176	1,542,201
1925	305,732	1,597,512
1926	388,436	1,553,652
1927	320,671	1,515,960
1928	212,242	1,560,399

Perfumery, Etc., Not Containing Alcohol

	Pounds.	Dollars.
1922	1,556,411	2,149,714
1923	1,479,368	1,908,144
1924	536,112	434,112
1925	665,050	475,953
1926	566,118	293,494
1927	841,568	443,892
1928	421,266	336,950

Imports Into the United States

Persian Berry Extract

	Pounds.	Dollars.
1881	.....	.....
1891	.....	1,702
1901	.....	511
1913	64,598	7,175
1914	115,336	12,924
1915	92,576	12,345
1916	17,353	4,227
1917	8,507	1,887
1918	.....	.....
1919	.....	.....
1920	17,166	6,322
1921	.....	.....
1922	21,217	4,042
1923	15,322	2,634
1924	16,907	2,299
1925	12,994	1,849
1926	15,636	2,248
1927	29,063	4,194
1928	16,236	3,193

Phenolphthalein

	Pounds.	Dollars.
1914	14,076	14,090
1915	49,326	46,295
1916	11,432	9,740
1917	3,576	7,794
1918	.....	.....
1919	100	1,200
1920	200	736
1921	.....	.....
1922	5,120	2,421
1923	8,148	17,917
1924	1,270	1,791
1925	970	3,861
1926	1,488	1,910
1927	496	648
1928	2,614	2,292

Phenylenediamine, Phenylglycin, Etc.

	Pounds.	Dollars
1919	2,246	1,225
1920	2,929	2,431
1921	.....	.....
1922	.....	.....
1923	6	16
1924	.....	.....
1925	.....	.....
1926	2,475	2,559
1927	15,258	17,318
1928	750	894

Phosphate Materials, Crude, N. E. S.

	Tons.	Dollars.
1871	.....	165,703
1881	.....	918,835
1891	32,883	287,057
1901	23,535	152,780
1914	23,551	177,838
1915	2,801	26,982
1916	8,190	69,820
1917	96	1,420
1918	6	60
1919	32	323
1920	54	1,681
1921	541	9,725
1922	3,945	63,150
1923	10,729	153,410
1924	1,714	36,274
1925	6,154	129,469
1926	4,165	81,437
1927	10,389	158,423
1928	17,265	174,047

Phosphate Rock, Crude

	Tons.	Dollars.
1924	17,084	202,165
1925	8,472	101,696
1926	8,006	103,175
1927	20,529	255,164
1928	28,322	238,417

Phosphorus

	Pounds.	Dollars.
1871	.....	32,872
1881	.....	52,113
1891	151,166	53,590
1901	38,315	15,...
1914	605	264
1915	612	251
1916	.....	.....
1917	4,010	2,306
1918	88,692	57,572
1919	564,043	205,567
1920	99,806	23,462
1921	361,332	70,644
1922	648,135	86,884
1923	488,855	62,319
1924	167,251	44,278
1925	120,091	44,842
1926	146,717	55,102
1927	136,879	52,095
1928	130,848	44,922

Photographic Chemicals (Coal Tar)

	Pounds.	Dollars.
1917	11,322	103,580
1918	11,492	50,863
1919	14,261	99,318
1920	15,477	72,109
1921	30,727	80,632
1922	11,650	25,917
1923	17,371	29,470
1924	5,211	16,475
1925	6,958	21,728
1926	12,343	38,302
1927	26,796	68,101
1928	24,810	66,642

Pigments, Black (Except Mineral Earth), Dry or Ground in Oil or Water, N. E. S.

	Pounds.	Dollars.
1925	465,157	8,094
1926	1,118,396	22,174
1927	1,292,904	36,274
1928	1,253,570	43,034

Pigments, Iron Oxide and Iron Hydroxide

	Pounds.	Dollars.
1924	22,908,117	564,633
1925	26,516,612	624,259
1926	26,281,730	658,101
1927	26,348,690	636,511
1928	25,070,870	586,004

Pigments, Mineral Earths, N. E. S.

	Pounds.	Dollars.
1925	252,713	9,673
1926	172,826	5,296
1927	257,383	3,998
1928	32,013	1,580

Pimento (Allspice), Ground

	Pounds.	Dollars.
1928	71,330	16,999

Pimento (Allspice), Unground

	Pounds.	Dollars.
1871	1,386,542	55,289
1881	1,774,344	159,960
1891	1,195,270	49,326
1901	4,254,196	208,793
1913	7,212,109	259,506
1914	1,517,971	54,506
1915	1,330,158	36,769
1916	1,355,575	46,241
1917	3,277,578	115,401
1918	4,064,556	182,847
1919	1,193,629	54,677
1920	4,064,481	314,583
1921	3,325,870	176,718
1922	4,845,769	181,117
1923	3,773,833	107,054
1924	5,394,631	106,728
1925	3,270,110	153,878
1926	2,890,134	292,076
1927	2,840,258	360,208
1928	1,286,860	316,075

Pitch, Burgundy

	Pounds.	Dollars
1881	58,285	1,554
1891	212,627	3,520
1901	171,771	3,650
1913	977,629	43,799
1914	1,055,527	40,480
1915	131,967	4,051
1916	14,756	673
1917	25	3
1918	100	12
1919	.....	.....
1920	.....	.....
1921	3,776	479
1922	47,191	6,532
1923	61,400	3,821
1924	105,627	5,263
1925	255,695	12,737
1926	72,789	5,156
1927	105,460	8,700
1928	127,930	9,110

Pitch, Marine Glue

	Pounds.	Dollars
1913	303,186	14,392
1914	317,506	15,154
1915	56,532	3,807
1916	481,633	20,496
1917	327,311	18,447
1918	276,702	18,860
1919	164,348	11,287
1920	173,336	11 194
1921	230,177	15,188
1922	89,975	9,431
1923	446,318	20,766
1924	589,516	25,552
1925	585,147	36,898
1926	303,457	21,468
1927	216,188	17,955
1928	126,160	13,141

Plaster Rock or Gypsum, Crude

	Tons.	Dollars.
1871	112,900	88,256
1881	144,682	128,107
1891	167,606	176,588
1901	197,144	213,317
1913	386,927	462,889
1914	417,580	482,320
1915	260,161	316,306
1916	306,757	372,308
1917	230,392	276,952
1918	141,106	176,959
1919	69,538	92,548
1920	191,913	282,601
1921	234,719	359,027
1922	295,593	454,192
1923	350,509	497,339
1924	477,289	750,203
1925	421,178	681,590
1926	652,082	1,154,570
1927	741,680	1,178,088
1928	921,761	1,251,421

Plaster Rock or Gypsum, Ground or Calcined

	Tons.	Dollars.
1871	.....	64,465
1881	.....	24,915
1891	9,243	86,809
1901	2,520	15,606
1913	3,910	26,228
1914	4,292	30,225
1915	3,943	30,333
1916	6,494	36,322
1917	12,321	107,999
1918	11,828	79,335
1919	7,416	106,131
1920	7,536	110,353
1921	11,954	151,752
922	3 617	51,591
923	2,088	45,463

Stated separately after 1923.

Plaster Rock or Gypsum, Ground

	Tons.	Dollars.
1924	1,887	22,163
1925	1,275	18,936
1926	3,343	48,721
1927	2,203	31,034
1928	2,254	30,192

Plaster Rock or Gypsum, Calcined or Plaster of Paris

	Tons.	Dollars.
1924	3,278	38,021
1925	5,424	85,825
1926	5,190	69,292
1927	5,822	89,818
1928	5,939	74,405

Plasters, Healing, or Curative, and Court Plaster.

	Pounds.	Dollars.
1913	.....	4,639
1914	.....	10,929
1915	.....	7,171
1916	.....	8,094
1917	.....	7,571
1918	.....	5,531
1919	.....	7,278
1920	.....	9,244
1921	.....	12,595
1922	.....	6,972
1923	.....	13,571
1924	6,545	10,065
1925	9,804	13,493
1926	7,294	10,608
1927	8,549	12,744
1928	9,388	13,878

Plumbago or Graphite

	Tons.	Dollars.
1871	2,904	136,200
1881	8,489	381,966
1891	10,126	509,719
1901	13,110	930,002
1913	25,233	1,972,177
1914	24,866	1,846,074
1915	17,057	1,387,873
1916	30,938	4,298,530
1917	42,270	9,678,160
1918	25,440	6,018,662
1919	18,670	2,222,519
1920	20,924	2,346,302
1921	14,797	1,160,054
1922	6,279	845,815
1923	15,264	843,567

Stated separately after 1923.

Plumbago or Graphite, Amorphous

	Pounds.	Dollars.
1924	26,053,208	152,320
1925	16,860,716	119,844
1926	16,961,791	147,093
1927	18,860,269	157,663
1928	16,458,940	131,592

Plumbago or Graphite, Crystalline Lump, Chip or Dust

	Pounds.	Dollars.
1924	11,951,651	326,782
1925	9,023,207	237,920
1926	12,891,839	503,539
1927	10,750,977	376,367
1928	12,599,902	383,259

Plumbago or Graphite, Crystalline Flake

	Pounds.	Dollars.
1924	3,123,636	79,678
1925	2,817,127	126,783
1926	7,222,180	427,866
1927	3,805,559	208,201
1928	3,480,611	180,224

Polishing and Cleaning Creams, Except Blanco Polish

	Pounds.	Dollars.
1891	.....	42,971
1901	.....	.....
1914	.....	6,085
1915	.....	11,600
1916	.....	14,133
1917	.....	7,208
1918	.....	22,879
1919	.....	18,402
1920	.....	15,082
1921	.....	26,235
1922	.....	11,845
1923	.....	34,600
1924	158,299	34,684
1925	164,329	37,637
1926	163,949	34,517
1927	199,384	37,141
1928	412,610	103,016

Potash-bearing Dusts Used for Fertilizers

	Tons.	Dollars.
1924	6	220
1925	1	16
1926	202	5,932
1927	25	178
1928	4	198

Potash Bicarbonate

	Pounds.	Dollars
1871	770,823	10,550
1881	798,585	39,214
1891	76,828	4,344
1901	73,770	5,054
1913	311,645	14,295
1914	478,853	22,767
1915	383,534	20,341
1916	2,062	614
1918	171,528	84,387
1919	87,946	25,119
1920	5,008	1,20(
1917	10,053	5,271
1921	594,287	116,49(
1922	381,605	19,80(
1923	703,325	38,396
1924	253,524	17,297
1925	387,064	25,353
1926	327,759	20,491
1927	633,868	36,075
1928	393,859	22,020

Potash Bitartrate

(See Argols, etc.)

Potash Bromide

	Pounds.	Dollars.
1924	131,222	10,199
1925	992,244	162,465
1926	78,335	19,759
1927	58,816	16,672
1928	22,750	7,775

Potash Carbonate, Crude

	Pounds.	Dollars.
1901	18,888,612	627,601
1913	10,063,912	295,066
1914	9,046,302	240,451
1915	8,620,504	291,341
1916	444,241	27,689
1917	1,069,408	185,910
1918	9,185,741	2,928,288
1919	1,092,792	378,745
1920	15,916,283	801,541
1921	3,515,339	369,699
1922	4,097,490	176,742

Not stated after 1922.

Potash Carbonate, Refined

	Pounds.	Dollars
1891	7,241,990	259,537
1901	3,448,349	112,783
1913	14,035,111	412,587
1914	10,421,005	368,958
1915	2,377,940	92,959
1916	174,587	38,604
1917	202,385	53,170
1918	445,282	124,019
1919	130,040	40,980
1920	1,318,531	144,407
1921	577,275	162,255
1922	266,527	16,455

Not stated after 1922.

Potash Carbonate

	Pounds.	Dollars.
1923	9,463,808	503,252
1924	7,124,979	324,459
1925	8,133,313	341,975
1926	10,194,271	457,334
1927	13,139,340	691,176
1928	14,847,535	693,739

Potash, Caustic or Hydrate, Unrefined

	Pounds.	Dollars.
1901	3,840,777	180,277
1912	8,422,007	330,684
1913	8,994,449	348,501
1914	8,565,451	326,650

Not stated after 1922.

Potash, Caustic or Hydrate, Refined

	Pounds.	Dollars.
1901	86,798	7,195
1912	77,184	8,097
1913	112,822	11,920
1914	18,751	1,977

Not stated after 1922.

Potash Chlorate and Perchlorate

	Pounds.	Dollars.
1871	395,068	85,315
1881	1,086,781	150,444
1891	3,361,838	341,661
1901	1,108,379	97,388
1913	1,235,732	66,609
1914	40,319	3,408
1915	27,419	4,614
1916	.....	.....
1917	437,339	194,008
1918	1,029,980	610,702
1919	315,565	113,498
1920	698,385	97,206
1921	2,060,124	179,068
1922	8,806,221	827,539
1923	9,040,975	439,730
1924	10,119,771	421,465
1925	9,834,711	406,554
1926	6,242,161	245,723

Stated separately after 1926.

Potash Chlorate

	Pounds.	Dollars.
1927	13,257,379	472,914
1928	12,619,243	454,734

Potash Chromate and Bichromate

	Pounds.	Dollars.
1871	2,170,478	223,529
1881	4,404,237	402,088
1891	1,234,085	95,261
1901	200,519	14,401
1913	27,671	2,601
1914	34,860	2,822
1915	40,227	3,317
1916	2,291	391
1917	2,404	962
1918	20	8
1919	.....	.....
1920	19,864	6,961
1921	331	89
1922	74,850	7,052
1923	8,301	1,710
1924	8,962	1,631
1925	7,950	1,402
1926	6,107	1,092
1927	7,756	1,321
1928	4,708	853

Potash, Crude, or Black Salts

	Pounds.	Dollars.
1881	.....	1,227
1891	.....	.....
1901	.....	.....
1914	2,599,888	92,464
1915	4,076,788	83,502
1916	1,504,149	53,752
1917	2,819,235	233,111
1918	727,588	112,235
1919	268,441	12 814
1920	4,912 740	144,317
1921	10,681,304	309,060
1922	3.642.249	84.884

Not stated after 1922.

Potash Cyanide

	Pounds.	Dollars.
1901	2,029,993	475,833
1913	1,151,890	137,585
1914	1,236,799	188,259
1915	747,627	143,331
1916	43,705	9,311
1917	70,147	49,513
1918	13,455	3,150
1919	444,581	32,161
1920	5,175,608	430,873
1921	13,353,271	977,664
1922	2,007,752	175 019
1923	3,019,859	243,809
1924	2,577,901	205,532
1925	1,149,928	111,112
1926	1,910,819	197,680
1927	100,450	36,678
1928	334,488	64,193

Potash Hydroxide (Caustic)

	Pounds.	Dollars.
1891	1,891,607	85,535
1915	4,993,471	225,092
1916	39,770	9,222
1917	74,780	33,648
1918	11,732	4,396
1919	466,620	124,563
1920	782,477	220,163
1921	4,934,697	474,479
1922	15,079,586	685,716
1923	11,105,132	602,535
1924	11,210,895	647,320
1925	12,706,761	740,075
1926	13,081,524	774,769
1927	13,659,460	812,537
1928	12,587,996	792,653

See "Potash, Caustic, Etc.," for 1912, 1913 and 1914.

Potash Iodide

	Pounds.	Dollars.
1871	17.842	49,503
1881	480	1,267
1891	1,024	935
1901	663	1,328
1913	120	239
1914	270	491
1915	4	13
1916	309	1,032
1917	24,357	58,752
1918	65,992	133,611
1919	25,963	74,534
1920	11,377	34,706
1921	890	2,435
1922	.....	.....
1923	14	92
1924	54	137
1925	63	253
1926	7	38
1927	10	75
1928	4	16

Potash Muriate, Crude

	Tons.	Dollars.
1871	.....	61,270
1881	11,401	335,799
1891	37,927	1,182,007
1901	69,281	2,083,641
1913	223,887	6,737,757
1914	284,856	7,925,781
1915	102,882	3,660,353
1916	2,126	460,688
1917	606	174,806
1918	596	166,979
1919	1,677	201,307
1920	110,324	11,038,173
1921	49,911	5,290,196
1922	131,423	5,549,580
1923	149,372	4,694,569
1924	119,605	3,828,891
1925	154,772	4,767,146
1926	181,015	5,801,091
1927	102,831	5,292,086
1928	192,132	6,799,306

Imports Into the United States

Potash Nitrate, Crude

(See Saltpeter, Crude.)

Potash Nitrate, Refined

	*Pounds.	Dollars.
1871	67	7,820
1881	162	19,535
1891	79	6,194
1901	216	18,433
1913	197	22,142
1914	166	20,173
1915	34	4,222
1916	2	749
1917	288	35,143
1918	43	16,193
1919	1	96
1920	103	20,658
1921	14,444	107,649
1922	683	48,558
1923	1,974	554,097
1924	4,370,193	192,437
1925	8,208,966	331,842
1926	9,414,892	484,007
1927	8,479,211	372,691
1928	9,776,195	392,314

* Quantity stated in tons prior to 1924.

Potash Perchlorate

	Pounds.	Dollars.
1927	279,085	20,816
1928	606,907	42,274

Potash Permanganate

	Pounds.	Dollars.
1871	2,735,769	112,521
1881	.....	.....
1891	.....	.....
1901	.....	.....
1913	357,366	25,314
1914	1,351,855	91,065
1915	1,039,304	78,924
1916	214,291	57,306
1917	6,946	11,727
1918	43,826	106,104
1919	18,107	43,330
1920	9,446	5,100
1921	104,041	47,984
1922	856,067	109,085
1923	922,791	116,996
1924	536,001	63,225
1925	164,313	13,964
1926	42,558	4,068
1927	347,799	29,669
1928	416,008	36,032

Potash Prussiate, Red (Ferricyanide)

	Pounds.	Dollars.
1871	17,480	7,222
1881	106,424	49,685
1891	35,826	10,650
1901	30,262	7,357
1913	65,316	11,302
1914	89,976	15,325
1915	83,574	14,922
1916	2,560	3,520
1917	4,523	10,425
1918	9,824	18,496
1919	13,992	25,497
1920	87,506	52,483
1921	66,004	30,232
1922	39,716	15,121
1923	114,142	75,850
1924	71,585	29,705
1925	115,666	32,498
1926	108,015	30,390
1927	167,533	46,444
1928	100,532	28,545

Potash Prussiate, Yellow (Ferrocyanide)

	Pounds.	Dollars.
1871	255,325	58,009
1881	544,167	108,954
1891	2,223,154	368,366
1901	1,609,358	218,908
1913	2,812,408	309,302
1914	3,508,228	390,021
1915	2,316,736	255,711
1916	44,156	31,651
1917	41,128	32,251
1918	134,638	111,096
1919	58,003	45,869
1920	1,141,224	188,797
1921	398,961	99,211
1922	515,633	109,228
1923	609,272	150,122
1924	331,335	52,237
1925	238,643	31,337
1926	182,685	20,875
1927	167,589	22,206
1928	125,948	16,178

Potash Sulphate, Crude

	Tons.	Dollars.
1891	1,362	49,619
1901	15,632	558,136
1913	48,023	1,798,369
1914	44,986	1,887,491
1915	21,705	1,071,623
1916	2,427	197,808
1917	656	20,538
1918	138	19,837
1919	157	23,304
1920	6,356	1,073,322
1921	12,081	1,660,798
1922	45,280	2,085,348
1923	51,885	2,118,979
1924	68,354	2,682,881
1925	67,331	2,554,808
1926	61,465	2,409,174
1927	70,534	2,871,368
1928	81,385	3,608,808

Potash Salts, Not Elsewhere Specified

	Pounds.	Dollars.
1924	89,666	4,521
1925	59,406	4,345
1926	86,077	9,923
1927	201,436	29,306
1928	242,258	36,797

Potassium Aluminum Sulphate or Potash Alum

	Pounds.	Dollars.
1924	2,566,611	56,063
1925	3,387,875	57,749
1926	3,362,640	59,181
1927	2,755,804	44,979
1928	1,201,995	21,103

Potassium

	Pounds.	Dollars.
1921	15,227	581
1922	42,869	3,643
1923	4,013	740
1924	103	52
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Potassium and Sodium Tartrate (Rochelle Salt)

	Pounds.	Dollars.
1871	100	27
1881	33	9
1891	547	100
1901	272	33
1913	186,305	23,419
1915	253,609	19,244
1916	187	47
1917	17,840	4,352
1918	31,160	8,614
1919	6,742	2,966
1920	69,440	17,580
1921	246,698	48,614
1922	472,626	67,496
1923	327,778	48,918
1924	305,064	37,507
1925	372,468	40,890
1926	271,674	31,118
1927	264,544	31,703
1928	155,233	18,596

Press Cloth for Oil Milling Purposes

	Pounds.	Dollars.
1920	8,502	9,225
1921	11,582	13,643
1922	8,401	6,559
1923	32,560	40,372
1924	120,464	46,612
1925	195,323	66,270
1926	166,582	74,517
1927	299,048	131,302
1928	43,114	22,565

Propylene Chlorohydrin, Dichloride, and Glycol

	Pounds.	Dollars.
1926	231	311
1927	4,409	504
1928	.....	.....

Putty (Whiting, Ground in Oil)

	Pounds.	Dollars.
1871	5,534	118
1881	287	28
1891	122	14
1901	15,362	378
1913	36,434	881
1914	37,020	911
1915	18,078	343
1916	16,082	380
1917	33,286	1,472
1918	36,398	3,781
1919	4,735	811
1920	96,372	4,717
1921	393,138	12,420
1922	744,495	13,947
1923	871,458	18,519
1924	156,156	5,180
1925	316,662	14,175
1926	165,888	4,770
1927	223,765	3,901
1928	394,107	8,259

Pyrethrum or Insecticide Flowers, Crude

	Pounds	Dollars.
1918	2,298,476	422,751
1919	3,390,026	667,374
1920	6,827,700	2,672,576
1921	3,958,657	1,749,213
1922	2,600,693	789,988
1923	3,962,222	1,742,108
1924	2,950,269	1,316,503
1925	2,812,093	1,022,043
1926	8,945,124	1,344,645
1927	10,472,479	1,271,335
1928	11,377,445	2,425,171

Pyrethrum or Insecticide Flowers, Advanced in Value

	Pounds.	Dollars.
1924	162,880	60,702
1925	44,385	16,305
1926	4,495	1,074
1927	34,419	7,413
1928	68,721	16,199

Pyridin and Quinolin

	Pounds.	Dollars.
1918	11,981	1,051
1919	123,049	15,248
1920	493,383	56,604
1921	434,668	121,437
1922	148,911	22,075
1923	363,762	92,398

Stated separately after 1923

Pyridin

	Pounds.	Dollars.
1924	641,689	278,254
1925	661,791	303,353
1926	964,935	483,803
1927	418,359	181,106
1928	29,281	9,150

Pyroxylin Compounds, or Other Cellulose Esters

		Dollars.
1881	.....	2
1891	.....	11,785
1901	.....	725
1913	.....	288,639
1914	.....	583,391
1915	.....	371,714
1916	.....	127,627
1917	.....	59,693
1918	.....	53,054
1919	.....	43,172
1920	.....	77,673
1921	.....	155,536
1922	.....	86,069
1923	.....	629,972
1924	.....	1,748,420
1925	.....	1,469,323
1926	.....	2,306,646
1927	.....	2,800,443
1928	.....	2,627,782

Quassia

	Pounds.	Dollars.
1924	894,250	5,799
1925	443,319	3,801
1926	1,286,773	12,182
1927	688,972	8,561
1928	2,030,341	15,049

Quebracho Extract

	Pounds.	Dollars.
1913	63,604,814	1,672,314
1914	99,605,839	2,699,104
1915	125,565,857	3,676,749
1916	81,501,892	5,432,458
1917	61,977,849	5,382,433
1918	101,523,282	4,917,212
1919	137,151,143	5,856,803
1920	154,944,717	8,128,641
1921	110,184,508	6,602,449
1922	134,274,423	5,205,641
1923	119,825,707	4,716,221
1924	118,919,230	3,546,774
1925	101,130,658	3,208,155
1926	115,758,079	3,980,893
1927	106,292,121	4,472,836
1928	99,049,084	4,445,350

Quebracho Wood.

	Tons.	Dollars.
1913	101,869	1,300,126
1914	73,957	900,880
1915	54,715	750,873
1916	106,864	1,598,465
1917	95,211	1,086,946
1918	53,871	848,671
1919	2,689	31,048
1920	33,672	480,503
1921	32,901	531,566
1922	23,987	265,910
1923	42,297	556,354
1924	28,215	440,163
1925	22,645	354,596
1926	26,453	472,966
1927	44,724	698,674
1928	72,821	1,263,965

Quicksilver or Mercury

	Pounds.	Dollars.
1871	239,223	107,646
1881	138,517	57,733
1891	457,056	254,837
1901	1,666	899
1913	380	237
1914	444,673	192,609
1915	561,924	292,244
1916	554,852	595,057
1917	242,526	239,401
1918	580,460	641,316
1919	319,074	338,595
1920	1,227,582	1,184,374
1921	728,105	616,517
1922	986,956	502,824
1923	1,506,682	960,823
1924	1,178,450	632,688
1925	1,120,970	754,842
1926	1,940,041	1,581,787
1927	1,795,242	1,832,599
1928	1,113,228	1,477,125

Quicksilver Flasks, Bottles and Drums Used in Exporting Acids

	Number.	Dollars.
1913	.....	259,123
1914	.....	280,620
1915	.....	180,676
1916	.....	204,642
1917	.....	168,955
1918	.....	393,528
1919	.....	861,168
1920	.....	855,963
1921	.....	895,725
1922	.....	1,145,102
1923	.....	344,278
1924	.....	85,568
1925	.....	44,970
1926	.....	118,836
1927	13,234	173,215
1928	106,092	1,387,524

Quinidine and Its Salts

	Ounces.	Dollars.
1924	415,011	20,985
1925	12,208	7,496
1926	126,740	38,470
1927	40,500	24,207
1928	67,000	24,401

Quinine Alkaloid

	Ounces.	Dollars
1924	165,700	94,538
1925	163,000	86,541
1926	9,788	6,765
1927	279,390	153,243
1928	174,400	109,613

Quinine, Crude

	Ounces.	Dollars.
1924	124,292	51,075
1925	466,536	204,599
1926	213,700	103,447

Not stated after 1926.

Quinine Sulphate

	Ounces.	Dollars
1871	10,861	12,261
1881	408,851	1,052,228
1891	3,079,000	805,729
1901	3,495,996	1,078,472
1913	2,279,734	397,409
1914	2,224,765	486,641
1915	1,508,931	378,511
1916	1,409,228	1,022,821
1917	623,947	324,438
1918	1,256,172	593,019
1919	2,101,006	1,238,125
1920	2,888,550	1,376,514
1921	1,935,531	1,489,166
1922	1,008,600	594,178
1923	2,926,988	1,176,809
1924	2,270,382	1,123,999
1925	1,482,390	650,901
1926	1,519,832	690,746
1927	1,804,914	687,831
1928	1,791,746	676,049

Quinine, Other Salts and Derivatives

	Ounces	Dollars
1924	271,306	134,491
1925	337,585	136,977
1926	122,828	62,232
1927	194,678	91,893
1928	165,696	73,392

Radio-Active Substances

		Dollars.
1928	.....	669

Radium Salts

	Grains.	Dollars
1914	.....	29,988
1915	.....	29,983
1916	.....	3,712
1917	.....	50
1918	.....	.....
1919	11	882
1920	12	11,033
1921	807	3,027
1922	913	15,719
1923	80	268,646
1924	116	417,758
1925	141	452,811
1926	126	306,470
1927	174	571,863
1928	144	486,411

Red Lead

	Pounds.	Dollars.
1871	1,295,616	78,411
1881	212,423	10,000
1891	519,913	20,950
1901	524,935	23,933
1913	145,478	7,223
*1914	69,887	5,674
1915	6,697	342
1916	196	43
1917	20,471	5,296
1918	5	1
1919	7,184	1,134
1920	345	73
1921	22,772	1,720
1922	12,715	729
1923	1,110	72
1924	4,014	241
1925	2,860	232
1926	2,952	238
1927	28,828	2,496
1928	45,303	3,522

* 20,940 pounds, $5,681, came in free of duty for construction and equipment of vessels.

Rennets

	Pounds.	Dollars.
1871	.....	254
1881	.....	34,261
1891	.....	90,042
1901	.....	90,812
1913	.....	129,588
1914	.....	129,720
1915	.....	106,614
1916	.....	80,694
1917	.....	13,.54
1918	.....	62,173
1919	40,905	97,964
1920	185,652	159,039
1921	122,968	72,092
1922	186,939	81,351
1923	287,201	73,176
1924	249,388	74,557
1925	171,623	63,643
1926	170,544	139,200
1927	137,127	109,901
1928	127,292	66,101

Resorcinol, Medicinal

	Pounds.	Dollars.
1920	5,159	2,642
1921	156,028	112,312
1922	.....	.....
1923	6,720	8,390
1924	.....	.....
1925	14,525	18,824
1926	7,622	9,901
1927	6,340	13,390
1928	6,606	10,269

Resorcinol, Not Medicinal

	Pounds.	Dollars.
1924	8,040	11,946
1925	7,770	10,490
1926	17,640	23,808
1927	18,869	24,359
1928	45,820	54,335

Rochelle Salt

(See Potassium and Sodium Tartrate)

Rhubarb Root

	Pounds.	Dollars.
1881	163,519	42,607
1891	90,592	18,406
1901	216,803	20,766
1913	121,701	16,554
1914	181,240	22,354
1915	233,699	24,592
1916	155,924	17,701
1917	238,601	32,084
1918	190,962	20,879
1919	119,245	46,903
1920	283,138	234,757
1921	109,626	64,997
1922	125,212	44,088
1923	197,518	58,047
1924	174,087	48,736
1925	148,080	35,248
1926	125,663	32,074
1927	258,032	80,405
1928	156,796	52,407

Rose Leaves

	Pounds.	Dollars.
1891	.....	6,966
1901	.....	1,678
1913	.....	67
1914	.....	1,434
1915	.....	484
1916	.....	1,060
1917	.....	4,199
1918	.....	4,164
1919	1,399	557
1920	25,627	10,566
1921	9,536	4,153
1922	7,255	2,606
1923	14,671	3,427
1924	12,706	3,871
1925	5,085	2,544
1926	33,602	7,311
1927	22,229	5,507
1928	40,858	14,269

Rosin, Violin

	Pounds.	Dollars.
1871	.....	460
1881	.....	4,636
1891	.....	136
1901	.....	3,470
1913	.....	30,621
1914	.....	11,625
1915	.....	6,532
1916	.....	4,393
1917	.....	2,872
1918	.....	3,746
1919	.....	2,292
1920	.....	6,506
1921	.....	7,300
1922	.....	8,021
1923	.....	16,664
1924	27,823	16,256
1925	24,206	12,656
1926	33,861	17,077
1927	42,536	21,525
1928	23,562	13,025

Saccharides

	Pounds.	Dollars.
1924	15,833	13,784
1925	15,775	20,138
1926	8,923	13,208
1927	18,070	22,660
1928	372,882	58,085

Saccharin

	Pounds.	Dollars.
1901	29,334	35,734
1913	47	64
1914	8	30
1915	5,617	6,737
1916	12,954	76,789
1917	1,596	18,276
1918	1	48
1919	.....	.....
1920	.....	.....
1921	40	89
1922	46	118
1923	1	14
1924	.....	.....
1925	51	17
1926	.....	.....
1927	.....	.....
1928	.....	.....

Saffron, Crude

	Pounds.	Dollars.
1927	5,242	90,051
1928	4,760	52,892

Saffron, Safflower, and Saffron Cake Extract

	Pounds.	Dollars.
1871	.....	294
1881	.....	54,326
1891	.....	44,599
1901	.....	42,502
1913	.....	93,146
1914	.....	85,678
1915	.....	70,132
1916	.....	111,420
1917	.....	124,235
1918	.....	54,109
1919	16,459	77,273
1920	25,704	133,732
1921	22,969	67,454
1922	26,273	88,584
1923	16,215	63,506
1924	3,008	23,429
1925	5,077	14,016
1926	3,163	5,759
1927	1,371	2,254
1928	471	1,187

Imports Into the United States

Sage, Unground.

	Pounds.	Dollars.
1913	1,299,120	19,308
1914	2,005,469	39,309
1915	822,068	48,454
1916	1,865,815	130,464
1917	1,528,823	92,409
1918	1,364,295	150,004
1919	977,440	148,267
1920	1,418,414	150,878
1921	2,270,304	174,773
1922	1,562,480	66,391
1923	1,877,407	55,379
1924	2,084,325	59,309
1925	1,857,423	43,384
1926	1,496,848	38,874
1927	1,408,845	39,701
1928	1,738,446	52,337

Sage, Ground

	Pounds.	Dollars.
1928	3,780	262

Sago, Crude, and Sago Flour.

	Pounds.	Dollars.
1871	1,719,256	45,601
1881	1,247,219	38,845
1891	3,970,504	101,303
1901	51,991	1,588
1913	12,389,192	230,992
1914	9,970,717	160,924
1915	6,630,400	106,090
1916	10,999,587	284,073
1917	7,893,055	204,864
1918	22,179,761	654,261
1919	3,092,967	104,915
1920	6,115,486	332,327
1921	2,591,377	86,583
1922	5,868,870	132,454
1923	7,591,363	206,265

Stated separately after 1923.

Sago, Crude

	Pounds.	Dollars.
1924	2,755,692	63,269
1925	71,401	3,332
1926	292,310	9,392
1927	235,543	8,132
1928	531,519	6,188

Sago Flour

	Pounds.	Dollars.
1924	5,649,356	144,495
1925	5,895,116	163,253
1926	5,768,575	164,183
1927	5,050,136	143,835
1928	5,740,245	151,860

Sal Ammoniac

(See Ammonia Chloride)

Salicin

	*Ounces.	Dollars.
1881	.....	6,410
1891	4,987	6,428
1901	4,506	14,935
1913	3,274	12,146
1914	4,129	14,982
1915	1,800	6,560
1916	453	2,135
1917	390	2,307
1918	319	2,845
1919	560	5,791
1920	1,374	16,379
1921	1,843	19,771
1922	2,000	7,770
1923	2,618	6,641
1924	7,370	2,351
1925	19,684	4,308
1926	29,318	5,518
1927	25,088	4,089
1928	27,559	5,023

* Stated in pounds prior to 1925.

Salol

	Pounds.	Dollars
1914	660	219
1915	23,430	11,445
1916	4,069	2,182
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Salt

	100 pounds.	Dollars.
1912	2,901,815	379,540
1913	2,508,561	356,911
1914	3,397,496	456,426

Stated separately after 1914; see following classes.

Salt in Bags, Barrels or Other Packages

	*Pounds.	Dollars.
1871	2,839,938	800,454
1881	4,124,422	1,242,543
1891	1,736,861	584,845
1901	1,114,571	372,482
1915	620,462	213,676
1916	552,616	195,791
1917	375,658	176,784
1918	268,426	158,832
1919	117,690	107,941
1920	1,463,794	280,684
1921	643,076	264,852
1922	784,226	322,153
1923	417,370	210,260
1924	17,224,372	164,980
1925	19,035,256	118,850
1926	13,494,824	110,572
1927	8,860,799	81,391
1928	7,066,416	61,055

* Stated as "100 lbs." prior to 1925.

Salt in Bulk

	*Pounds.	Dollars.
1871	2,747,351	355,318
1881	5,293,610	358,068
1891	2,504,581	258,270
1901	1,920,887	187,681
1915	1,959,638	172,888
1916	1,591,032	184,975
1917	1,808,867	158,096
1918	755,044	145,640
1919	577,416	99,988
1920	292,446	174,364
1921	1,843,017	365,190
1922	1,817,899	285,538
1923	1,412,040	335,020
1924	48,052,607	110,218
1925	112,124,461	122,501
1926	93,431,852	106,979
1927	32,185,494	44,885
1928	33,046,186	45,523

* Stated as "100 lbs." prior to 1925.

Saltpeter, Crude

	*Tons.	Dollars.
1871	5,072,381	208,423
1881	11,014,226	414,630
1891	16,090,490	494,121
1901	41,343,897	473,578
1913	10,989,382	288,995
1914	3,547,252	115,470
1915	677,785	22,483
1916	5,412,130	734,123
1917	10,171,654	904,506
1918	8,715,327	956,853
1919	34,557,048	1,298,391
1920	20,862,012	929,045
1921	30,868,786	1,407,044
1922	6,208,779	189,569
1923	5,581,009	168,410
1924	1,600	102,017
1925	3,235	179,095
1926	11,869	675,134
1927	6,468	333,095
1928	7,692	322,710

* Quantity stated in pounds prior to 1924.

Salvarsan, Arsphenamine, and Similar Arsenical Medicinal Compounds

	Pounds.	Dollars.
1924	4	35
1925	.....	.....
1926	2,229	26,032
1927	22	2,541
1928	138	12,301

Santonin and Its Salts

	Pounds.	Dollars.
1871	983	6,065
1881	483	2,317
1891	5	7
1901	6,584	11,984
1913	1,982	44,358
1914	5,230	125,126
1915	912	25,568
1916	20,925	586,850
1917	111	3,906
1918	223	7,502
1919	1,125	49,688
1920	2,778	162,335
1921	2,613	236,864
1922	7,960	959,153
1923	1,202	208,974
1924	1,444	150,049
1925	1,389	50,304
1926	1,552	61,381
1927	1,731	130,711
1928	1,535	180,968

Sarsaparilla Root

	Pounds.	Dollars.
1871	242,314	46,067
1881	270,820	63,641
1891	631,985	90,694
1901	675,928	55,790
1913	301,308	38,360
1914	224,970	36,284
1915	250,178	36,055
1916	291,276	41,489
1917	146,047	18,994
1918	110,709	31,454
1919	221,946	58,136
1920	289,175	90,291
1921	128,043	38,346
1922	179,388	46,584
1923	186,763	51,510
1924	249,807	50,597
1925	122,573	26,544
1926	158,449	37,297
1927	211,578	45,818
1928	121,036	23,479

Satin White and Precipitated Calcium Sulphate

	Pounds.	Dollars.
1926	2,478	86
1927	2,632	110
1928	970	35

Scammony

	Pounds.	Dollars.
1924	47,066	1,537
1925	12,046	649
1926	62,334	2,522
1927	35,742	1,138
1928	130,685	4,280

Seed, Anise

	Pounds.	Dollars.
1871	93,847	8,625
1881	367,186	29,386
1891	300,880	19,348
1901	391,659	20,356
1913	1,250,831	84,941
1914	231,117	15,412
1915	432,863	30,982
1916	789,487	68,713
1917	475,100	67,221
1918	364,406	61,330
1919	261,837	34,610
1920	658,425	115,258
1921	292,620	39,649
1922	441,085	46,913
1923	461,067	66,869
1924	646,605	77,803
1925	266,540	30,349
1926	433,371	44,006
1927	372,815	36,769
1928	428,014	42,863

Seed, Canary

	Pounds.	Dollars.
1871	2,226,560	56,952
1881	3,087,620	86,838
1891	7,711,060	122,671
1901	3,731,800	67,791
1913	6,219,623	184,596
1914	4,503,380	190,530
1915	4,911,298	208,835
1916	5,368,551	181,896
1917	4,909,107	166,774
1918	3,242,223	201,469
1919	3,953,049	406,883
1920	7,084,823	538,554
1921	5,596,315	355,175
1922	5,255,957	254,394
1923	9,986,544	319,151
1924	9,654,355	370,409
1925	11,929,399	579,531
1926	12,604,143	656,252
1927	14,915,813	467,393
1928	15,396,037	431,278

Seed, Caraway

	Pounds.	Dollars.
1871	.....	113,387
*1881	1,801,860	49,542
1891	1,606,501	53,806
1901	1,281,382	77,273
1913	3,691,831	234,294
1914	1,906,300	107,599
1915	2,895,418	172,742
1916	2,978,581	280,146
1917	505,804	71,745
1918	635,677	247,499
1919	579,599	204,493
1920	2,475,082	315,846
1921	2,443,550	154,389
1922	3,707,392	203,548
1923	3,135,176	394,054
1924	2,418,014	813,659
1925	5,578,562	819,323
1926	4,511,279	268,900
1927	6,007,907	373,426
1928	4,328,645	338,941

* Includes "Coriander."

Seed, Cardamom

	Pounds.	Dollars.
1871	5,557	13,932
1881	42,456	66,079
1891	41,399	21,945
1901	60,252	32,805
1913	113,461	104,287
1914	80,782	72,148
1915	152,679	106,180
1916	225,687	119,162
1917	214,464	88,605
1918	253,328	108,505
1919	139,808	70,114
1920	210,871	107,507
1921	190,312	101,581
1922	245,815	77,487
1923	318,368	70,847
1924	140,709	123,105
1925	162,472	219,892
1926	151,052	200,675
1927	170,611	182,273
1928	236,472	219,500

Seed, Castor

(See Castor Beans)

Seed, Celery

	Pounds.	Dollars.
1914	405,738	86,809
1915	639,673	117,475
1916	607,581	161,839
1917	755,532	142,164
1918	167,684	65,563
1919	318,544	182,810
1920	938,027	314,160
1921	386,786	50,377
1922	763,906	159,273
1923	418,495	132,723
1924	610,923	141,826
1925	557,720	168,026
1926	1,152,003	232,311
1927	870,508	142,834
1928	710,395	112,453

Seed, Coriander

	Pounds.	Dollars.
1871	45,189	2,574
*1881	.....	.....
1891	.....	.....
1901	655,382	17,092
1913	1,324,735	85,817
1914	1,238,430	46,158
1915	1,496,288	36,851
1916	1,587,923	54,870
1917	1,111,127	124,098
1918	1,829,183	255,279
1919	2,325,578	215,858
1920	2,179,989	94,998
1921	472,239	13,643
1922	1,986,314	77,314
1923	1,988,593	158,850
1924	1,329,218	92,551
1925	1,747,654	68,474
1926	1,713,613	56,775
1927	1,607,848	54,029
1928	1,344,755	91,755

* Included in "Caraway."

Seed, Cotton

	Pounds.	Dollars.
1901	1,979,718	7,200
1914	8,891,303	66,085
1915	22,724,868	114,988
1916	30,113,684	251,568
1917	53,362,927	982,835
1918	35,435,460	1,047,657
1919	62,965,821	1,308,493
1920	59,906,675	1,687,974
1921	39,458,235	649,138
1922	59,937,765	518,406
1923	56,236,520	438,095
1924	166,089,886	1,482,411
1925	72,695,800	915,070
1926	87,292,542	1,098,097
1927	31,678,171	444,449
1928	50,244	969

Seed, Cumin

	Pounds.	Dollars.
1871	1,065	180
*1881	.....	.....
*1891	496,723	12,087
*1901	1,090,261	22,744
1913	529,667	27,178
1914	530,550	31,709
1915	694,344	83,534
1916	1,446,006	225,672
1917	1,159,598	207,012
1918	1,520,691	198,855
1919	971,982	117,217
1920	1,836,564	167,292
1921	788,493	49,812
1922	1,126,887	103,796
1923	580,929	104,310
1924	683,313	130,671
1925	576,616	90,025
1926	666,186	70,830
1927	386,382	26,386
1928	390,900	40,760

* Includes "Fenugreek."

Seed, Fennel

	Pounds.	Dollars.
1871	6,643	562
1881	150,062	9,313
1891	.....	.....
1901	107,523	6,918
1913	187,665	14,410
1914	207,135	12,299
1915	293,810	13,622
1916	312,927	20,751
1917	443,704	48,497
1918	218,091	24,133
1919	160,584	20,412
1920	282,522	34,903
1921	143,594	17,468
1922	222,650	18,479
1923	436,278	48,421
1924	393,168	40,680
1925	243,426	19,457
1926	236,022	19,982
1927	220,504	19,324
1928	214,481	31,636

Seed, Fenugreek

	Pounds.	Dollars.
1871	16,457	571
1913	1,944,407	37,434
1914	1,619,230	29,601
1915	1,434,826	30,295
1916	811,270	20,672
1917	1,052,843	71,102
1918	851,532	80,504
1919	1,673,229	181,996
1920	1,043,036	44,168
1921	746,396	17,996
1922	207,192	4,932
1923	1,112,671	42,920
1924	575,009	23,524
1925	771,179	27,581
1926	941,167	27,852
1927	1,028,332	26,315
1928	1,160,459	35,676

Seed, Flax

	Bushels (56 lbs.).	Dollars.
1871	4,113,586	5,977,926
1881	4,787,466	1,126,370
1891	1,479,239	1,629,901
1901	1,533,997	1,966,913
1913	5,274,922	8,118,319
1914	8,052,022	10,571,656
1915	10,373,902	12,983,548
1916	14,637,543	20,151,683
1917	12,484,859	25,295,281
1918	12,785,034	33,830,735
1919	8,433,426	22,643,803
1920	23,367,328	76,741,919
1921	16,168,523	39,132,988
1922	13,630,598	26,018,260
1923	24,988,621	50,399,196
1924	19,593,921	36,461,900
1925	13,419,147	31,328,431
1926	19,353,747	38,460,574
1927	24,130,253	42,921,722
1928	18,143,578	32,007,528

Seed, Flax, Screenings

	Pounds.	Dollars
1914	.....	4,748
1915	.....	673
1916	.....	4,506
1917	.....	2,052
1918	.....	37,818
1919	13,970,091	84,207
1920	31,055,762	183,710
1921	25,993,195	105,630
1922	18,320,345	46,247
1923	26,368,766	54,995
1924	18,833,694	46,369
1925	16,949,564	94,299
1926	18,259,278	47,294
1927	15,265,166	40,503
1928	7,974,870	28,456

Seed, Hemp

	Pounds.	Dollars.
1871	857,396	28,224
1881	1,324,355	26,403
1891	3,558,146	73,409
1901	1,769,375	36,336
1913	2,347,979	44,483
1914	2,031,438	38,315
1915	2,591,026	39,992
1916	4,036,614	63,163
1917	5,355,921	110,176
1918	449,772	12,232
1919	760,353	26,395
1920	5,194,599	264,652
1921	3,763,970	82,245
1922	2,925,317	63,566
1923	4,055,649	88,983
1924	3,629,497	89,121
1925	3,608,887	90,497
1926	4,094,427	112,294
1927	5,337,786	130,183
1928	4,127,717	102,797

Seed, Mustard, Whole

	Pounds.	Dollars.
1871	1,608,270	103,192
1881	1,157,832	63,240
1891	2,871,660	92,052
1901	4,489,206	159,993
1913	12,719,682	417,370
1914	11,543,941	370,964
1915	10,157,934	543,586
1916	16,402,112	1,070,567
1917	9,962,122	776,546
1918	13,035,827	683,096
1919	11,272,770	842,033
1920	14,817,829	1,510,783
1921	4,618,253	253,903
1922	12,490,026	487,509
1923	12,958,622	582,434
1924	14,586,459	634,418
1925	11,253,678	671,912
1926	15,442,561	978,226
1927	23,923,943	1,317,362
1928	13,720,659	727,103

Seed, Pepper

	Pounds.	Dollars.
1913	10,414	4,579
1914	11,536	4,879
1915	15,324	6,379
1916	14,900	6,202
1917	4,962	2,846
1918	21,884	15,964
1919	7,022	11,042
1920	1,997	2,159
1921	5,376	4,301
1922	7,275	5,527
1923	3,335	5,002
1924	808	472
1925	3,733	2,967
1926	5,901	3,508
1927	2,318	1,806
1928	4,335	2,967

Seed, Perilla and Sesame

	Pounds.	Dollars.
1924	13,463,511	637,866
1925	4,772,272	279,180
1926	1,783,243	91,674
1927	3,403,041	187,375
1928	6,675,611	323,034

Seed, Poppy

	*Pounds.	Dollars.
1891	5,323	13,108
1901	22,686	57,440
1913	77,396	237,069
1914	56,322	126,744
1915	52,899	172,018
1916	26,648	176,776
1917	3,878	25,565
1918	130,024	215,840
1919	11,820	29,206
1920	33,745	363,369
1921	86,096	476,246
1922	94,637	388,644
1923	105,587	640,399
1924	4,802,196	419,410
1925	6,045,993	551,117
1926	3,356,570	375,609
1927	5,373,243	531,915
1928	6,606,276	562,488

* Quantity stated in "Bushels" prior to 1924.

Seed, Rape

	Pounds.	Dollars.
1871	145,323	6,450
1881	531,412	19,986
1891	891,441	19,681
1901	1,702,504	71,527
1913	4,308,750	169,834
1914	5,970,937	211,301
1915	5,194,132	230,280
1916	9,977,353	311,212
1917	4,819,360	186,877
1918	12,673,276	741,810
1919	742,780	43,935
1920	6,905,051	456,402
1921	4,984,014	277,547
1922	5,892,308	267,330
1923	7,117,384	326,711
1924	7,415,458	324,314
1925	5,094,289	260,992
1926	8,128,081	435,945
1927	8,084,394	388,034
1928	8,336,534	376,107

Imports Into the United States

Seed, Soya (Beans)

	Pounds.	Dollars.
1914	1,929,435	49,507
1915	3,887,365	67,206
1916	3,008,065	78,968
1917	5,334,334	132,572
1918	31,805,997	692,964
1919	8,208,208	145,996
1920	4,022,552	213,696
1921	4,661,458	190,074
1922	3,111,866	118,953
1923	3,605,730	148,428
1924	3,957,908	152,533
1925	3,850,406	143,893
1926	4,010,491	163,881
1927	3,884,319	150,509
1928	4,468,000	169,355

Seed, Sunflower

	Pounds.	Dollars.
1924	2,936,924	86,607
1925	781,421	19,777
1926	176,263	4,815
1927	398,107	14,321
1928	2,375,855	79,806

Seed, Worm, Levant

	Pounds.	Dollars.
1924	2,131	4,440
1925	2,967	2,596
1926	4,669	8,028
1927	4,563	6,028
1928	1,723	3,566

Selenium and Its Salts

	Pounds.	Dollars.
1914	.....	363
1915	.....	43
1916	.....	16
1917	.....	302
1918	.....	2,236
1919	.....	.....
1920	114	25,866
1921	1,104	2,092
1922	1,654	2,534
1923	935	1,636
1924	305	626
1925	2,227	3,726
1926	11,450	20,934
1927	17,908	33,427
1928	17,611	32,521

Senna

	Pounds.	Dollars.
1891	.....	51,876
1901	.....	91,884
1913	2,634,117	150,555
1914	2,454,772	173,054
1915	2,180,288	209,313
1916	2,794,400	361,881
1917	5,116,315	844,733
1918	3,575,066	771,067
1919	2,554,069	628,852
1920	3,425,200	572,419
1921	2,780,666	349,839
1922	1,946,635	191,53*
1923	3,130,187	244,160
1924	2,968,361	281,008
1925	3,194,199	277,873
1926	3,072,449	198,138
1927	3,144,228	214,923
1928	2,959,155	195,710

Sheep Dip

	Pounds.	Dollars.
1891	.....	893
1901	.....	59,016
1913	.....	63,527
1914	.....	16,842
1915	.....	32,963
1916	.....	21,198
1917	.....	17,185
1918	.....	26,989
1919	88,535	6,958
1920	172,562	13,880
1921	53,450	5,240
1922	10,377	1,480
1923	106,963	6,549
1924	92,509	6,781
1925	120,532	10,351
1926	96,989	9,493
1927	125,525	13,485
1928	136,200	13,755

Siennas, Crude, Not Ground

	Pounds.	Dollars.
1891	1,147,282	24,070
1901	795,996	14,624
1914	6,489,329	55,925
1915	6,656,081	64,658
1916	5,206,292	83,428
1917	2,980,972	61,136
1918	2,731,181	61,801
1919	2,060,857	48,237
1920	2,555,705	76,715
19**	5,111,832	150,857
1922	2,590,290	102,584
1923	2,897,886	105,713
1924	1,555,050	46,733
1925	1,652,544	41,194
1926	1,935,778	48,837
1927	1,745,802	43,321
1928	1,485,390	39,771

Silica for Use as Pigment

	Tons.	Dollars.
1927	24	149
1928	20	535

Silver Leaf

	*Leaves.	Dollars.
1871	1,160	5,500
1881	250	919
1891	1	15
1901	30	85
1913	17,130	2,122
1914	34,070	4,353
1915	31,298	3,718
1916	6,445	802
1917	1,125	135
1918	1,750	382
1919	.....	.....
1920	3,955	1,334
1921	8,630	3,446
1922	4,412	741
1923	4,475	837
1924	3,700	1,171
1925	381,000	1,284
1926	949,500	2,487
1927	725,000	2,240
1928	425,000	964

* Quantity stated in 100 leaves prior to 1925.

Slag, Basic, for Fertilizers

	Tons.	Dollars.
1913	5,124	146,477
1914	9,509	108,565
1915	561	7,306
1916	81	1,031
1917	41	549
1918	2	54
1919	117	2,305
1920	22	680
1921	.....	.....
1922	33	933
1923	487	12,218
1924	495	7,679
1925	464	6,946
1926	153	2,335
1927	1,186	13,597
1928	2,302	27,868

Soap Bark or Quillaya

	Pounds.	Dollars.
1924	332,356	18,917
1925	139,589	7,796
1926	569,535	25,972
1927	426,402	23,222
1928	361,067	27,911

Soap, Castile

	Pounds.	Dollars.
1901	3,842,827	245,876
1914	4,604,995	368,310
1915	4,067,921	341,107
1916	3,245,550	355,580
1917	2,390,356	306,126
1918	1,027,148	147,286
1919	955,088	143,906
1920	2,170,294	380,981
1921	2,039,498	310,015
1922	2,289,479	289,635
1923	1,827,204	199,626
1924	1,575,001	167,892
1925	1,848,192	229,673
1926	1,876,440	260,451
1927	2,106,694	286,228
1928	2,918,808	407,444

Soap, Medicated

	Pounds.	Dollars.
1914	74,132	29,306
1915	32,048	14,082
1916	16,455	3,523
1917	4,287	1,975
1918	16,844	7,412
1919	9,745	8,853
1920	10,217	4,599
1921	20,338	16,192
1922	39,183	9,193
1923	32,801	4,773
1924	32,364	8,143
1925	15,831	3,933
1926	65,774	13,366
1927	21,677	7,539
1928	116,975	12,506

Soap, Toilet, Perfumed

	Pounds.	Dollars.
1871	.....	76,490
1881	.....	77,312
1891	.....	281,255
1901	.....	413,819
1914	.....	248,194
1915	.....	193,646
1916	.....	147,819
1917	.....	194,613
1918	.....	125,275
1919	137,301	113,996
1920	242,632	153,638
1921	363,906	227,624
1922	648,243	283,514
1923	601,134	241,129
1924	850,755	281,507
1925	869,019	328,641
1926	1,015,602	361,558
1927	1,191,446	439,709
1928	1,600,054	545,971

Soap, Toilet, Unperfumed

	Pounds.	Dollars.
1871	.....	223,061
1881	.....	175,439
1891	.....	251,955
1901	.....	100,650
1914	.....	140,048
1915	.....	82,057
1916	.....	64,570
1917	.....	13,635
1918	.....	12,110
1919	39,151	17,600
1920	67,944	22,189
1921	85,635	36,479
1922	625,098	108,442
1923	442,499	85,943
1924	133,321	28,007
1925	166,410	37,709
1926	101,145	22,266
1927	192,214	43,801
1928	200,270	34,086

Soaps, All Other

	Pounds.	Dollars.
1891	.....	45,560
1901	.....	14,475
1914	.....	24,740
1915	.....	53,940
1916	.....	18,245
1917	.....	21,406
1918	.....	31,639
1919	153,528	15,038
1920	198,233	22,189
1921	341,480	36,479
1922	498,572	57,539
1923	1,952,481	214,249
1924	2,084,451	209,066
1925	2,371,781	267,069
1926	2,633,859	293,555
1927	2,478,859	264,151
1928	1,596,875	168,336

Soda Acetate

	Pounds.	Dollars.
1924	119,903	5,116
1925	403,451	15,534
1926	537,327	25,950
1927	955,574	59,701
1928	1,534,125	64,763

Soda Arsenate

	Pounds.	Dollars.
1901	74,614	2,122
1914	228,270	8,267
1915	85,950	3,138
1916	36,176	3,436
1917	23,296	2,404
1918	35	88
1919	.....	.....
1920	11,448	1,118
1921	131,915	11,946
1922	14,146	1,122
1923	2,971	360
1924	21,168	2,315
1925	16,217	1,559
1926	145,453	9,613
1927	92,655	5,468
1928	11,012	644

Soda Ash (Carbonate, Calcined)

	Pounds.	Dollars.
1871	145,428,215	2,387,583
1881	295,227,766	4,154,258
1891	326,099,239	4,122,700
1901	34,443,555	306,982
1913	3,100,790	35,461
1914	2,228,991	28,100
1915	2,127,542	29,022
1916	878,175	20,718
1917	1,047,295	29,239
1918	1,514,765	55,231
1919	.....	.....
1920	1,926,332	39,437
1921	6,690,573	93,802
1922	17,944,667	242,888
1923	1,529,334	22,556
1924	1,854,511	21,151
1925	259,586	6,203
1926	140,585	7,362
1927	108,112	4,910
1928	75,508	2,696

Soda Benzoate

	Pounds.	Dollars.
1914	190	97
1915	40,903	19,182
1916	35,188	100,195
1917	80,755	339,868
1918	1,589	4,742
1919	55,188	11,459
1920	67,397	10,473
1921	1,032	10,122
1922	11,369	3,001
1923	.....	.....
1924	.....	.....
1925	110	43
1926	.....	.....
1927	.....	.....
1928	.....	.....

Soda Bicarbonate

	Pounds.	Dollars.
1871	18,998,399	421,177
1881	1,951,851	58,812
1891	758,612	15,611
1901	144,182	5,006
1913	80,699	2,238
1914	88,873	2,334
1915	93,318	2,594
1916	129,414	2,867
1917	34,742	1,821
1918	29,444	944
1919	12,685	711
1920	13,353	3,514
1921	5,990	417
1922	357,216	5,627
1923	47,415	1,470
1924	7,396	466
1925	11,244	702
1926	20,925	1,345
1927	62,348	2,185
1928	81,389	3,948

Soda Bisulphate (Niter Cake)

	Pounds.	Dollars.
1924	55,126	1,043
1925	1,067	55
1926	53	3
1927	4,620	271
1928	.....	.....

Soda Bisulphite, Meta-Bisulphite

	Pounds.	Dollars.
1924	122,843	3,918
1925	366,715	10,452
1926	561,179	15,640
1927	1,773,354	44,947
1928	1,634,775	38,784

Soda Borate

(See Borax, Refined)

Soda Bromide

	Pounds.	Dollars.
1924	168,232	13,826
1925	754,159	139,894
1926	81,760	24,204
1927	170,857	61,309

Not stated separately after 1927.

Soda Carbonate, Crystal

	Pounds.	Dollars.
1871	28,637,489	281,892
1881	.....	.....
1891	.....	.....
1901	611,961	5,663
1913	169,174	2,928
1914	307,488	3,323
1915	144,452	2,748
1916	49,231	889
1917	60,464	1,299
1918	70,116	2,028
1919	.....	.....
1920	203	16
1921	74,271	2,266
1922	16,042	623

Not stated after 1922.

Soda, Caustic

(See Soda Hydroxide)

Soda Chlorate

	Pounds.	Dollars.
1891	385,972	51,502
1901	795,659	44,173
1913	50	10
1914	469	84
1915	62	6
1916	22,176	3,105
1917	33,600	1,080
1918	44,800	8,064
1919	10	2
1920	424,280	38,973
1921	365,611	26,397
1922	1,031,351	46,910
1923	1,612,958	64,104
1924	732,967	28,226
1925	813,168	30,252
1926	1,485,980	52,981
1927	1,703,094	60,758
1928	1,959,493	60,758

Soda Chromate and Bichromate

	Pounds.	Dollars.
1901	54,105	2,781
1913	9	3
1914	11,056	586
1915	.....	.....
1916	6,154	3,630
1917	.....	.....
1918	27,127	5,259
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	86,608	6,794
1923	527	106
1924	77	19
1925	59	10
1926	171	36
1927	56,011	1,495
1928	380	96

Soda Cyanide

	Pounds.	Dollars.
1914	7,856,611	1,120,789
1915	6,187,418	955,907
1916	684,198	115,186
1917	1,875,324	861,777
1918	84,652	39,406
1919	138,970	13,408
1920	8,629,502	729,514
1921	7,733,063	1,074,434
1922	14,328,817	1,237,622
1923	25,454,043	2,180,464
1924	29,625,886	2,448,882
1925	28,362,771	2,593,074
1926	30,648,908	2,851,080
1927	32,377,820	2,587,836
1928	31,102,262	2,420,369

Soda, Fluoride

	Pounds.	Dollars.
1927	990,978	56,104
1928	1,162,155	65,275

Soda, Hydrated, Sal Soda

	Pounds.	Dollars.
1871	28,687,489	281,892
1881	15,695,044	119,793
1891	38,548,579	252,051
1901	5,169,275	22,779
1913	128,027	1,010
1914	163,626	1,274
1915	104,800	606
1916	67,210	334
1917	50	4
1918	75	3
1919	44,800	1,156
1920	5,056	603
1921	45,360	1,390
1922	23,419	262
1923	12,500	1,752
1924	60	6
1925	30,123	2,251
1926	46,518	1,602
1927	13,660	439
1928	35,168	1,001

Soda Formate

	Pounds.	Dollars.
1927	40,603	2,565
1928	20,212	1,179

Soda Hydroxide (Caustic)

	Pounds.	Dollars.
1871	27,952,469	877,710
1881	49,465,385	1,168,277
1891	76,788,411	1,821,127
1901	3,749,633	75,954
1913	671,490	25,304
1914	665,820	23,914
1915	444,185	19,318
1916	225,189	20,981
1917	109,983	21,052
1918	15,976	9,591
1919	2	2
1920	117,322	14,842
1921	67,950	7,766
1922	1,548,020	70,559
1923	118,300	12,027
1924	42,989	4,417
1925	70,905	8,815
1926	55,607	7,441
1927	207,819	35,937
1928	47,122	10,126

Soda Hydrosulphite and Compounds

	Pounds.	Dollars.
1901	5,222,369	50,639
1913	7,299	228
1914	926,135	128,828
1915	1,855,223	268,993
1916	5,125	166
1917	1,836	1,198
1918	6,960	6,723
1919	27,616	6,112
1920	11,014	7,904
1921	6,160	4,085
1922	1,717,653	32,617
1923	674,131	85,276
1924	447,893	83,307
1925	420,253	88,329
1926	216,172	47,772
1927	225,231	52,135
1928	285,686	51,007

Soda Nitrate

	Tons.	Dollars.
1871	25,145	1,254,961
1881	49,171	2,356,167
1891	104,818	2,929,760
1901	197,518	5,656,442
1913	586,315	20,713,375
1914	554,048	17,926,165
1915	575,371	16,240,510
1916	1,072,833	32,129,926
1917	1,361,999	44,425,196
1918	1,606,569	70,077,674
1919	1,410,714	63,229,548
1920	907,141	40,314,960
1921	853,756	42,322,979
1922	303,271	14,067,668
1923	897,198	43,062,754
1924	951,994	45,649,327
1925	1,104,808	51,952,270
1926	1,020,444	47,444,919
1927	646,869	28,891,712
1928	1,093,761	40,208,362

Soda Nitrite

	Pounds.	Dollars.
1901	90,125	4,642
1913	1,269,544	57,595
1914	1,844,379	76,813
1915	1,696,567	74,283
1916	2,595,330	170,150
1917	3,677,179	261,555
1918	2,755,083	226,294
1919	1,746,976	159,355
1920	8,897,758	978,676
1921	6,721,107	791,611
1922	1,372,768	70,813
1923	5,106,678	216,573
1924	4,939,081	202,570
1925	1,396,429	58,282
1926	2,834,537	104,457
1927	477,625	16,976
1928	142,337	5,313

Soda Phosphate

	Pounds.	Dollars.
1901	377,834	7,178
1913	30	14
1914	1,364,789	24,975
1915	485,300	7,765
1916	1,066	79
1917	1,561	521
1918	112	69
1919	.....	.....
1920	56	22
1921	238,416	8,113
1922	1,968,739	57,345
1923	1,096,392	32,136
1924	2,282,738	58,803
1925	2,081,753	47,596
1926	7,113,225	183,109
1927	13,615,618	317,923
1928	16,545,318	379,230

Soda Prussiate Yellow (Ferrocyanide)

	Pounds.	Dollars.
1913	1,887,369	118,475
1914	2,295,724	171,834
1915	1,529,958	120,477
1916	527,130	136,250
1917	175,980	96,592
1918	.....	.....
1919	274,441	99,899
1920	2,633,090	445,849
1921	1,610,036	282,966
1922	3,832,491	473,065
1923	2,810,443	493,353
1924	1,789,858	68,687
1925	2,685,634	212,145
1926	1,254,551	85,207
1927	1,295,563	101,884
1928	1,921,418	157,524

Imports Into the United States

Soda Silicate (Water Glass)

	Pounds.	Dollars.
1871	384,882	7,826
1881	557,251	8,367
1891	535,030	6,429
1901	1,229,857	10,461
1913	1,062,118	9,400
1914	1,046,569	10,861
1915	1,587,902	16,292
1916	1,567,617	16,094
1917	1,208,944	16,498
1918	707,583	12,734
1919	673,777	16,847
1920	754,923	19,479
1921	1,069,466	32,088
1922	815,902	19,135
1923	1,050,735	25,187
1924	334,688	7,248
1925	243,561	6,949
1926	224,716	4,701
1927	208,317	4,008
1928	109,664	2,279

Soda, Silicofluoride or Fluosilicate

	Pounds.	Dollars.
1927	3,242,041	102,476
1928	3,529,084	99,057

Soda Sulphate, Anhydrous

	Tons.	Dollars
1924	68	1,671
1925	131	5,262
1926	592	17,036
1927	2,115	56,800
1928	2,623	65,283

Soda Sulphate, Crude (Salt Cake)

	*Pounds.	Dollars.
1871	.....	2,456
1881	696	8,187
1891	8,457	85,368
1901	3,412	34,645
1913	189	4,771
1914	206	2,486
1915	189	3,506
1916	91	6,392
1917	216	4,122
1918	468	8,382
1919	28	168
1920	.....	.....
1921	152	2,855
1922	189	5,994
1923	3,208	46,712
1924	9,216,939	73,497
1925	4,092,950	18,239
1926	3,222,185	49,143
1927	16,207,970	76,222
1928	37,239,231	164,551

* Quantity stated in tons prior to 1924.

Soda, Sulphate, Crystalized

(See Glauber's Salt)

Soda Sulphide

	Pounds.	Dollars.
1913	951,664	13,068
1914	2,529,911	36,368
1915	1,263,866	18,228
1916	80,513	4,616
1917	344,617	7,214
1918	117,532	1,707
1919	314,887	10,494
1920	2,008,495	64,678
1921	741,965	40,440
1922	8,916,743	261,210
1923	16,502,750	449,268
1924	5,234,701	154,897

Stated separately after 1924.

Soda Sulphide, Containing Not More Than 35% Sodium

	Pounds.	Dollars.
1925	593,786	14,834
1926	737,738	19,794
1927	824,755	18,169
1928	514,758	11,582

Soda Sulphide, Containing More Than 35% Sodium

	Pounds.	Dollars.
1925	1,953,060	47,730
1926	5,684,410	118,451
1927	8,706,410	173,575
1928	10,011,741	201,346

Soda Sulphite

	Pounds.	Dollars.
1913	27,152	400
1914	332,540	5,627
1915	165,594	4,316
1916	435	60
1917	68,224	1,221
1918	20,206	223
1919	11,400	1,007
1920	68,239	3,119
1921	206,428	8,369
1922	2,585,868	73,357
1923	2,014,699	73,550
1924	880,699	19,806
1925	413,799	12,318
1926	609,072	17,433
1927	964,286	27,946
1928	907,690	28,445

Soda, Sulphydrate

	Pounds.	Dollars.
1927	2,631,069	65,209
1928	296,357	6,923

Soda Sulphoxlyate Compounds

	Pounds.	Dollars.
1924	22,456	546
1925	6,052	1,640
1926	4,365	979
1927	.....	.....
1928	648	160

Soda Thiosulphate

	Pounds.	Dollars.
1924	797,921	11,893
1925	221,280	3,693
1926	71,296	1,445
1927	131,714	2,446
1928	33,737	652

Sodium

	Pounds.	Dollars.
1920	5,600	684
1921	.....	.....
1922	418,997	64,976
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Sodium Compounds N. E. S.

	Pounds.	Dollars.
1928	396,078	48,823

Spiegeleisen

	Tons.	Dollars.
1919	27	1,018
1920	3,312	175,980
1921	2,127	109,140
1922	2,204	75,412
1923	10,443	343,268
1924	5,387	161,718
1925	4,423	124,650
1926	5,275	152,740
1927	8,216	248,195
1928	4,189	118,849

Spirits, Distilled

	Proof gallons.	Dollars.
1927	538	2,439
1928	1,563	6,944

Sponges

		Dollars.
1871	.....	113,127
1881	.....	229,292
1891	.....	381,879
1901	.....	540,223
1912	.....	311,547
1913	.....	289,900

Includes manufactures of prior to 1914. Stated separately after 1913.

Sponges

		Dollars.
1914	.....	279,211
1915	.....	334,252
1916	.....	454,626
1917	.....	593,253
1918	.....	510,374
1919	.....	475,817
1920	.....	607,440
1921	.....	459,231
1922	.....	563,092
1923	.....	787,896
1924	1,419,389	787,031
1925	1,037,563	751,358
1926	971,772	950,775
1927	191,214	237,953
1928	941,868	1,144,258

Sponges, Manufactures of, N. E. S.

	Pounds.	Dollars.
1914	.....	38,300
1915	.....	42,042
1916	.....	58,797
1917	.....	55,077
1918	.....	27,682
1919	.....	8,053
1920	.....	24,212
1921	.....	37,219
1922	.....	34,245
1923	.....	22,346
1924	2,193	7,192
1925	1,451	3,409
1926	2,613	3,799
1927	766	845
1928	4,927	6,535

Starch, Potato

	Pounds.	Dollars.
1871	7,571	658
1881	35,896	2,124
1891	.....	.....
1901	.....	.....
1913	14,180,856	375,713
1914	13,934,741	238,661
1915	10,941,257	253,809
1916	2,237,717	72,736
1917	17,545,689	797,227
1918	18,195,079	902,499
1919	11,913,821	974,802
1920	9,017,574	547,672
1921	10,801,488	466,652
1922	7,156,786	319,174
1923	10,652,328	331,528
1924	11,271,952	353,917
1925	8,745,680	339,648
1926	15,349,232	521,152
1927	24,253,730	835,524
1928	23,055,228	857,808

Starch, Rice

	Pounds.	Dollars
1924	165,878	8,567
1925	146,451	13,367
1926	313,069	15,817
1927	323,054	18,712
1928	303,581	16,690

Starch, Soluble or Chemically Treated

	Pounds.	Dollars.
1913	321,071	13,945
1914	1,697,392	54,904
1915	569,297	21,559
1916	7,420	417
1917	44,788	3,244
1918	.....	.....
1919	1,223	148
1920	.....	.....
1921	143,158	10,492
1922	221,259	13,713
1923	504,247	16,683
1924	397,371	16,715
1925	977,372	43,359
1926	1,152,824	56,454
1927	1,102,530	66,215

Not stated separately after 1927.

Starch, Wheat

	Pounds.	Dollars.
1924	25,851	1,146
1925	33,089	1,670
1926	27,116	1,482
1927	44,092	2,348
1928	28,867	1,658

Starch, All Other (Except Cornstarch)

	Pounds.	Dollars.
1871	25,078	1,892
1881	1,108,819	33,854
1891	3,743,219	86,604
1901	6,753,106	144,881
1913	677,785	40,642
1914	962,314	52,186
1915	952,984	52,587
1916	1,242,918	78,838
1917	888,345	62,182
1918	590,469	67,855
1919	224,988	35,537
1920	1,024,662	109,008
1921	474,700	54,871
1922	602,905	58,949
1923	337,446	27,412
1924	515,635	44,133
1925	895,126	82,274
1926	1,244,766	80,955
1927	1,895,279	100,806
1928	1,452,216	96,802

Stearin, Vegetable, see "Candle Pitch, Etc."

Stramonium

	Pounds.	Dollars.
1924	190,035	7,020
1925	148,552	6,256
1926	175,404	11,944
1927	344,058	28,149
1928	349,143	30,727

Strontianite or Mineral Strontium Carbonate and Celestite or Mineral Strontium Sulphate

	Pounds.	Dollars.
1924	3,473,949	12,672
1925	3,190,208	14,133
1926	3,808,195	46,405
1927	2,817,844	37,559
1928	2,050,051	44,748

Strontium Carbonate, Precipitated

	Pounds.	Dollars.
1924	13,830	1,388
1925	44,359	1,451
1926	51,481	1,681
1927	32,051	1,630
1928	40,923	2,737

Strontium Nitrate

	Pounds.	Dollars.
1924	1,209,974	79,844
1925	2,098,410	120,731
1926	658,913	36,611
1927	1,816,053	101,316
1928	1,530,883	89,393

Strontium Oxide

	Pounds.	Dollars.
1891	.....	65
1901	.....	1,755
1913	.....	474
1914	.....	1,980
1915	.....	7,269
1916	.....	8,311
1917	.....	21,184
1918	.....	6,873
1919	316,640	1,358
1920	1,050,347	6,230
1921	2,816,726	16,020
1922	.....	.....
1923	23,285	1,143
1924	.....	.....
1925	663	120
1926	4,400	303
1927	2,204	320
1928	.....	.....

Strychnine Alkaloid

	Ounces.	Dollars.
1924	28,835	21,115
1925	35,700	16,245
1926	39,000	15,674
1927	47,500	14,081
1928	50,264	15,236

Strychnine Sulphate

	Ounces.	Dollars.
1924	11,291	5,592
1925	16,341	7,094
1926	36,583	14,458
1927	42,000	11,702
1928	.....	.....

Strychnine Salts, N. E. S.

	Ounces.	Dollars.
1871	5	12
1881	99	122
1891	230	175
1901	4,731	1,932
1913	968,575	4,112,057
1914	846,905	3,758,579
1915	26,907	11,449
1916	59,278	27,652
1917	33,323	25,617
1918	9,686	9,726
1919	186	362
1920	15,448	32,901
1921	29,029	45,851
1922	106,902	133,271
1923	165,780	186,751
1924	84,367	61,102
1925	64,151	26,688
1926	80,417	34,145
1927	24,008	7,890
1928	1,000	507

Sulphur Ore as Pyrites or Sulphuret of Iron, Containing Not in Excess of 25 Percent of Sulphur

	Tons.	Dollars.
1891	19,606	77,694
1901	352,644	1,184,899
1913	532	877
1914	17,419	5,408
1915	25,967	11,449
1916	1,370,059	7,121,614
1917	935,749	5,855,918
1918	807,084	4,526,563
1919	370,272	2,018,447
1920	425,545	2,190,012
1921	263,633	1,209,238
1922	228,067	701,324
1923	326,983	1,744,492
1924	238,358	700,468
1925	281,081	772,264
1926	318,702	766,051
1927	288,749	645,284
1928	373,412	978,499

Sulphur or Brimstone, Crude

	Tons.	Dollars.
1871	40,699	1,212,448
1881	113,190	2,713,485
1891	119,891	2,465,782
1901	159,710	2,575,115
1913	19,258	374,924
1914	20,236	346,875
1915	25,842	442,975
1916	22,539	372,599
1917	11,819	205,980
1918	282	8,677
1919	75	1,822
1920	51	1,898
1921	3	124
1922	2	141

See "Sulphur and Sulphur Ore" after 1922.

Sulphur, Lac or Precipitated

	Pounds.	Dollars.
1881	.....	775
1891	35,535	2,395
1901	61,357	3,612
1913	715,876	13,723
1914	283,896	12,636
1915	206,568	13,187
1916	217,997	16,628
1917	60,145	7,009
1918	84,224	10,797
1919	39,548	5,897
1920	99,001	16,025
1921	49,306	13,259
1922	21,904	3,352

See "Sulphur and Sulphur Ore" after 1922.

Sulphur, Refined

	Tons.	Dollars.
1871	104	4,328
1881	80	2,555
1891	307	6,579
1901	154	4,115
1913	1,742	41,626
1914	1,523	39,634
1915	1,296	36,275
1916	850	26,778
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	50	2,512
1921	35	2,329
1922	.....	.....

See "Sulphur and Sulphur Ore" after 1922.

Sulphur, Sublimed, or Flowers of

	Tons.	Dollars.
1871	74	3,374
1881	110	4,226
1891	271	8,866
1901	740	20,292
1913	6,104	122,006
1914	899	18,941
1915	950	31,202
1916	200	7,512
1917	295	13,317
1918	.....	.....
1919	.....	.....
1920	.....	.....
1921	.....	.....
1922	98	4,004

See "Sulphur and Sulphur Ore" after 1922.

Sulphur and Sulphur Ore

	Tons.	Dollars.
1923	1,810	31,028
1924	1,169	46,086
1925	8	257
1926	146	5,587
1927	1,234	22,683
1928	4,339	22,254

Sulphur in Other Forms Not Elsewhere Specified

	Pounds.	Dollars.
1924	*4,878,740	123,018
1925	3,116,288	72,485
1926	333,334	14,398
1927	249,801	23,908
1928	235,403	23,641

* Figures for six months ending June 30, 1924.

Sumac Extract

	Pounds.	Dollars.
1891	239,890	77,152
1901	161,317	52,105
1913	1,270,825	44,598
1914	1,463,297	59,022
1915	727,449	35,066
1916	36,003	4,108
1917	161,507	13,944
1918	28,706	2,616
1919	.....	.....
1920	.....	.....
1921	44,049	3,273
1922	37,262	3,875
1923	188,221	14,408
1924	252,508	17,000
1925	73,958	5,541
1926	54,228	5,504
1927	103,801	9,164
1928	138,041	10,025

Sumac, Ground

	*Tons.	Dollars.
1891	11,412,307	235,729
1901	9,985,746	179,801
1913	14,112,112	289,255
1914	9,678,719	231,580
1915	12,048,917	294,434
1916	20,411,022	527,102
1917	10,877,008	337,404
1918	10,587,920	355,192
1919	4,128,309	145,296
1920	16,636,562	593,739
1921	2,245,615	62,786
1922	9,155,685	187,335
1923	12,771,493	322,487
1924	3,691	307,498
1925	3,438	402,333
1926	2,947	262,523
1927	3,160	208,634
1928	3,878	205,439

* Quantity stated in pounds prior to 1924.

Sumac, Unground

	*Tons.	Dollars.
1871	10,141,787	420,823
1881	13,667,892	409,400
1891	2,953,202	65,802
1901	1,482,822	26,188
1913	621,386	12,420
1914	1,335,566	32,255
1915	1,258,204	32,612
1916	1,131,369	28,164
1917	700,015	27,769
1918	3,619,439	141,063
1919	5,182,786	162,557
1920	4,543,852	161,497
1921	481,491	11,236
1922	3,461,640	81,175
1923	3,991,529	111,079
1924	631	49,963
1925	896	80,705
1926	457	39,721
1927	1,127	70,822
1928	787	38,548

* Quantity stated in pounds prior to 1924.

Talc, Ground, Etc. (Except Toilet Preparations)

	Pounds.	Dollars.
1871	.....	496
1881	.....	18,735
1891	.....	.....
1901	1,138,558	7,574
1913	23,630,095	122,628
1914	32,498,063	173,023
1915	30,434,859	167,671
1916	33,736,067	207,179
1917	34,288,459	233,479
1918	27,550,409	207,265
1919	23,000,219	207,584
1920	36,579,129	365,912
1921	30,658,746	318,056
1922	33,491,507	336,514
1923	39,051,028	396,227
1924	33,290,949	326,074
1925	39,640,972	352,466
1926	43,906,493	402,612
1927	48,313,058	445,578
1928	49,148,880	450,671

Imports Into the United States

Talc, Steatite and French Chalk, Crude and Unground

	Pounds.	Dollars.
1871	162,982	3,906
1881	.....	.....
1891	.....	.....
1901	.....	.....
1914	2,807,974	23,369
1915	3,478,711	15,322
1916	4,681,165	9,703
1917	3,736,899	11,477
1918	4,721,980	10,528
1919	2,804,000	10,324
1920	2,958,582	10,254
1921	844,150	3,026
1922	420,075	5,845
1923	833,223	15,605
1924	1,161,518	14,495
1925	167,697	4,211
1926	149,412	4,310
1927	785,548	31,305
1928	658,575	26,673

Tallow, Animal

	Pounds.	Dollars.
1871	69,244	4,606
1881	65,044	4,318
1891	77,357	3,275
1901	84,449	5,108
1913	490,505	41,710
1914	3,371,833	231,924
1915	12,634,594	823,958
1916	4,779,076	396,787
1917	31,136,527	3,106,374
1918	98,176,560	14,365,676
1919	10,808,742	1,408,007
1920	11,251,437	1,665,799
1921	11,762,499	1,838,362
1922	1,405,820	79,702
1923	10,743,858	614,526
1924	2,467,896	194,577

Stated separately after 1924.

Tallow, Beef

	Pounds.	Dollars.
1925	2,592,420	251,341
1926	12,716,393	1,143,383
1927	2,049,847	156,191
1928	18,356,899	1,354,972

Tallow, Mutton

	Pounds.	Dollars.
1925	126,867	9,142
1926	450,014	40,260
1927	234,737	16,638
1928	2,889,250	170,892

Tallow, Vegetable

	Pounds.	Dollars.
1924	3,887,486	278,365
1925	7,080,887	538,890
1926	2,705,465	230,073
1927	5,715,479	420,801
1928	7,092,768	467,070

Tanks, Drums, or Vessels, for Holding Gas, Liquids, or Other Materials

	Number.	Dollars.
1914	.....	459,842
1915	.....	226,911
1916	.....	242,773
1917	.....	234,217
1918	.....	153,716
1919	.....	151,640
1920	.....	385,300
1921	.....	441,371
1922	.....	174,842
1923	.....	315,267
1924	.....	247,990
1925	.....	441,159
1926	.....	306,628
1927	155,621	862,867
1928	125,462	416,465

Tanning Extract, Oak

	Pounds.	Dollars.
1921	1,484,032	84,353
1922	496,079	27,557
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Tanning Extract, Wattle

	Pounds.	Dollars.
1924	58,976	1,935
1925	472,028	16,778
1926	222,440	9,208
1927	224,279	9,720
1928	193,571	10,630

Tanning Extracts, N. E. S.

	Pounds.	Dollars.
1924	413,324	29,285
1925	553,989	27,888
1926	602,904	34,969
1927	235,883	9,843
1928	206,755	12,252

Tanning Materials, Crude, Not Stated Elsewhere.

	Pounds.	Dollars.
1881	.....	560
1891	.....	2,008
1901	.....	46,739
1914	.....	81,595
1915	.....	64,995
1916	.....	270,292
1917	.....	365,596
1918	.....	95,446
1919	13,227,193	332,898
1920	49,008,222	1,692,589
1921	25,764,287	657,162
1922	9,214,918	136,184
1923	6,658,550	94,291
1924	9,940,403	78,625
1925	7,635,131	83,678
1926	4,702,305	32,644
1927	4,790,273	36,571
1928	1,628,937	13,899

Tanning Materials, Synthetic, From Coal Tar

	Pounds.	Dollars.
1926	665	1,081
1927	99	336
1928	.....	.....

Tapioca, Tapioca Flour, and Cassava

	Pounds.	Dollars.
1871	.....	62,110
1881	4,857,434	187,983
1891	8,147,585	243,885
1901	17,411,046	430,602
1914	71,304,728	1,590,614
1915	60,080,060	1,324,184
1916	64,838,470	1,902,399
1917	100,517,107	3,506,479
1918	92,351,460	4,734,860
1919	83,879,896	2,618,121
1920	119,746,319	6,848,677
1921	56,975,928	2,757,298
1922	72,224,281	1,956,308
1923	86,364,189	3,257,966
1924	85,173,291	4,108,231

Stated separately after 1924

Tapioca

	Pounds.	Dollars.
1925	16,277,436	831,036
1926	5,428,692	190,253
1927	26,901,394	1,214,753
1928	21,855,653	726,377

Tapioca Flour

	Pounds.	Dollars.
1925	93,880,875	3,680,233
1926	98,598,940	3,043,695
1927	65,709,758	1,841,726
1928	114,818,791	2,880,073

Tapers, Fuses, and Time-Burning Chemical Signals

		Dollars.
1926	.....	6,035
1927	.....	5,748
1928	.....	4,090

Tar, Coal, Crude, and Pitch of

	Barrels.	Dollars.
1891	89,351	236,450
1901	39,062	104,547
1913	14,093	23,691
1914	17,515	25,140
1915	16,391	23,874
1916	19,206	32,635
1917	5,594	10,702

Stated separately after Sept. 8, 1916.

Tar, Coal, Crude

	Barrels.	Dollars.
1891	3,887	11,644
1901	.....	.....
1917	5,864	10,381
1918	10,081	15,603
1919	25,400	42,270
1920	14,439	28,882
1921	29,694	43,315
1922	29,072	57,286
1923	11,851	35,942
1924	13,284	41,058
1925	11,322	33,527
1926	17,140	67,124
1927	11,920	34,499
1928	15,124	49,554

Tar, Coal, Pitch

	Barrels.	Dollars.
1891	.....	15,499
1901	.....	.....
1917	7,258	8,146
1918	15,838	32,582
1919	3,298	7,098
1920	6,168	15,425
1921	6,271	20,060
1922	24	153
1923	1,565	5,501
1924	5,756	17,376
1925	1,608	5,788
1926	4,682	16,774
1927	2,531	9,606
1928	3,383	7,336

Tar and Pitch of Wood

	Barrels (280 lbs.)	Dollars
1871	.....	5,033
1881	.....	7,769
1891	4,319	13,411
1901	1,797	10,414
1914	561	7,946
1915	129	1,551
1916	31	282
1917	681	5,908
1918	51	214
1919	132	215
1920	287	1,860
1921	712	3,677
1922	166	2,222
1923	434	6,754
1924	462	4,147
1925	1,938	18,931
1926	29,163	216,438
1927	25,115	191,266
1928	16,835	119,239

Tartar Emetic or Potassium-Antimony Tartrate

	Pounds.	Dollars.
1924	15,145	3,068
1925	5,180	898
1926	.....	.....
1927	16,211	2,905
1928	9,134	1,664

Tea, Impure, Waste, Siftings or Sweepings, for Manufacturing

	Pounds.	Dollars.
1901	.....	25,802
1914	5,213,956	178,302
1915	4,739,208	153,366
1916	4,796,766	201,507
1917	7,626,688	478,326
1918	10,887,595	782,473
1919	4,860,200	371,975
1920	11,076,802	617,592
1921	12,752,860	738,594
1922	2,823,585	120,887
1923	2,805,135	102,082
1924	5,179,370	173,061
1925	6,498,969	248,829
1926	4,209,274	262,688
1927	2,672,396	114,361
1928	4,705,317	182,529

Terpin Hydrate

	Pounds.	Dollars.
1914	6,929	1,020
1915	4,477	657
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	.....	.....
1922	.....	.....
1923	448	214
1924	.....	.....
1925	1,250	283
1926	.....	.....
1927	4,470	1,004
1928	17,098	4,309

Terra Alba, All Kinds

	Pounds.	Dollars.
1871	.....	133,028
1881	.....	39,983
1891	20,762,212	50,128

Not stated after 1891.

Terra Alba, Not Made from Gypsum or Plaster Rock

	Pounds.	Dollars.
1920	85,200	674
1921	11,200	133
1922	135,600	1,226

Not stated after 1922.

Tetrachloroethane

	Pounds.	Dollars.
1924	263,954	10,427
1925	493,185	17,307
1926	16,536	989
1927	70,173	3,585
1928	53,436	2,937

Theobromine and Its Salts

	Pounds.	Dollars.
1924	209	510
1925	440	956

Not stated after 1925.

Thiocarbanilide

	Pounds.	Dollars.
1925	1,496	2,510
1926	.....	.....
1927	.....	.....
1928	.....	.....

Thorium Nitrate

	Pounds.	Dollars.
1901	12,986	41,663
1913	112,108	212,263
1914	144,413	306,260
1915	78,516	186,385
1916	22,261	63,496
1917	1,877	5,263
1918	.....	.....
1919	.....	.....
1920	15,409	17,503
1921	69,903	103,786
1922	14,745	27,196
1923	54,192	88,840
1924	13,758	14,288
1925	13,248	13,589
1926	34,508	40,285
1927	8,350	11,862
1928	12,590	14,488

Thorium Oxide and Other Salts

	Pounds.	Dollars.
1914	2,465	4,075
1915	82	359
1916	2,813	6,062
1917	1,616	3,984
1918	.....	.....
1919	28	124
1920	.....	.....
1921	.....	.....
1922	7,830	12,329
1923	8,958	9,765
1924	.....	.....
1925	583	626
1926	689	778
1927	.....	.....
1928	302	377

Thyme Leaves, Unground

	Pounds.	Dollars.
1924	85	14
1925	1,592	132
1926	118	36
1927	3,498	221
1928	6,172	712

Thymol.

	Pounds.	Dollars.
1914	19,045	24,765
1915	4,772	12,921
1916	443	1,973
1917	1,759	13,741
1918	34,978	113,279
1919	8,430	75,013
1920	8,943	56,764
1921	9,598	63,326
1922	8,305	30,740
1923	9,143	22,738
1924	10,315	21,548
1925	22,757	62,740
1926	25,336	67,870
1927	22,754	52,186
1928	17,038	31,096

Tin Bichloride, Tetrachloride and Other Compounds

	Pounds.	Dollars.
1923	2,451,917	99,402
1924	149,830	8,191
1925	12,846	2,793
1926	92,291	11,727
1927	134,976	44,606
1928	.....	.....

Tin Foil

	Pounds.	Dollars.
1871	.....	29,422
1881	.....	33,456
1891	.....	31,882
1901	.....	48,529
1913	.....	436
1914	.....	649
1915	.....	1,216
1916	.....	1,506
1917	.....	2,285
1918	.....	212
1919	.....	84
1920	.....	465
1921	.....	9,371
1922	.....	3,027
1923	.....	2,961
1924	1,356	570
1925	2,958	2,518
1926	15,307	6,451
1927	19,945	15,137
1928	9,196	5,708

Tin Ore, Cassiterite, and Black Oxide

	*Tons.	Dollars.
1871	.....	3,061
1881	.....	2,510
1891	224	7
1901	2,200	640
1913	82,983	18,532
1914	19,540	3,022
1915	49,068	10,798
1916	40,533	8,134
1917	54,867	12,816
1918	29,014	8,914
1919	.....	.....
1920	14	6,924
1921	35	16,025
1922	104	31,378
1923	5,531	2,868,258
1924	950	798,017
1925	212	110,962
1926	301	168,522
1927	154	100,513
1928	132	74,854

* Quantity stated in pounds prior to 1920.

Tin Powder

	Pounds.	Dollars.
1924	5,296	3,441
1925	8,640	6,567
1926	2,953	2,703
1927	1,020	1,033
1928	465	425

Titanium

	Pounds.	Dollars.
1921	2,315	1,030
1923	13,686	3,334
1923	16,748	3,509
1924	17,029	3,827
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Titanium-Potassium Oxalate and Compounds

	Pounds.	Dollars.
1924	13,201	1,904
1925	75,033	12,917
1926	80,452	11,979
1927	64,831	9,868
1928	111,799	16,981

Toilet Brushes, N. E. S.

	Dozen.	Dollars.
1926	473,994	431,134
1927	544,359	551,957
1928	603,028	580,007

Toilet Waters Containing Alcohol

	Pounds.	Dollars.
1924	38,105	44,253
1925	10,646	24,421
1926	7,491	11,121
1927	2,735	6,494
1928	5,513	5,173

Toilet Waters Not Containing Alcohol

	Pounds.	Dollars.
1924	53,127	28,297
1925	120,290	74,142
1926	107,398	40,717
1927	4,325	3,100
1928	11,954	8,040

Tolidin, Toluene Sulfochloride, Etc.

	Pounds.	Dollars.
1925	23,056	3,000
1926	2,329	1,909
1927	19,760	7,387
1928	121,390	50,867

Toluene

	Pounds.	Dollars.
1925	73,400	2,642
1926	29,064	1,797
1927	154	55
1928	.....	.....

Tonka Beans

	Pounds.	Dollars.
1871	.....	19,694
1881	.....	80,636
1891	.....	312,537
1901	.....	19,821
1913	783,853	1,140,409
1914	545,156	677,195
1915	133,119	95,222
1916	143,321	94,700
1917	222,754	156,974
1918	405,429	204,280
1919	85,487	46,591
1920	266,090	255,497
1921	135,649	106,481
1922	149,777	111,284
1923	624,025	209,467
1924	302,663	256,610
1925	255,609	175,845
1926	311,942	354,796
1927	291,471	268,637
1928	341,809	334,323

Tooth Brushes

	Dozen.	Dollars.
1926	1,178,834	578,818
1927	680,534	319,687
1928	751,189	401,333

Trichloroethylene

	Pounds.	Dollars.
1924	308,673	14,481
1925	222,192	8,689
1926	.....	.....
1927	1,321	92
1928	85,737	5,257

Turmeric

	Pounds.	Dollars.
1901	.....	43,874
1913	.....	33,735
1914	.....	22,978
1915	.....	10,145
1916	.....	180,948
1917	.....	112,372
1918	.....	902
1919	689,962	46,205
1920	1,312,539	92,413
1921	737,736	37,136
1922	766,461	26,824
1923	798,082	36,014
1924	1,290,332	80,364
1925	1,084,448	82,334
1926	1,027,608	71,027
1927	1,125,891	47,025
1928	759,031	30,441

Turpentine, Gum, Including Venice

	Pounds.	Dollars.
1871	.....	2,980
1881	56,732	8,104
1891	70,185	8,138
1901	191,026	14,789
1913	60,878	9,169
1914	112,010	17,434
1915	20,904	3,172
1916	7,901	772
1917	1,045	248
1918	.....	.....
1919	.....	.....
1920	5,233	2,540
1921	10,914	2,626
1922	4,972	1,027
1923	32,946	4,526
1924	10,187	1,353
1925	9,274	1,534
1926	95,737	11,865
1927	144,699	16,227
1928	61,778	6,223

Turpentine, Spirits

	Gallons.	Dollars
1871	128	116
1881	.....	.....
1891	2,900	1,219
1901	12,697	4,496
1913	56,457	19,295
1914	72,879	28,818
1915	13,680	6,095
1916	20,678	8,282
1917	18,286	6,271
1918	1,433	564
1919	1,422	724
1920	28,506	37,555
1921	16,069	15,121
1922	70,467	45,184
1923	145,148	144,114
1924	153,394	125,391
1925	222,456	161,768
1926	300,853	220,775
1927	331,398	203,169
1928	289,612	156,639

Imports Into the United States

Ultramarine Wash Blue and All Blues Containing Ultramarine

	Pounds.	Dollars.
1871	.....	115,816
1881	913,935	127,352
1891	184,352	11,404
1901	319,903	37,790
1913	695,988	62,250
1914	901,208	78,392
1915	641,381	62,715
1916	401,605	44,709
1917	388,201	35,433
1918	359,186	35,210
1919	197,573	25,861
1920	438,443	41,136
1921	898,739	104,263
1922	688,282	69,509
1923	317,708	48,485
1924	777,406	94,818
1925	985,822	142,198
1926	913,468	131,037
1927	849,290	109,362
1928	978,564	119,695

Umbers, Crude, Not Ground

	Pounds.	Dollars.
1871	470,392	7,064
1881	1,475,835	11,126
1891	1,586,840	17,150
1901	1,798,788	13,689
1914	3,381,919	25,798
1915	7,225,537	36,128
1916	8,914,389	55,076
1917	9,211,112	66,217
1918	665,195	18,850
1919	425,017	11,776
1920	5,007,345	47,205
1921	7,124,483	77,526
1922	2,666,867	39,155
1923	9,168,941	80,580
1924	5,676,868	55,233
1925	6,570,820	46,565
1926	6,744,894	48,909
1927	5,362,765	36,142
1928	7,400,898	44,722

Umbers, Washed or Ground

	Pounds.	Dollars.
1924	1,111,058	28,309
1925	1,109,722	24,061
1926	1,333,171	48,693
1927	1,237,456	28,259
1928	1,070,698	26,841

Uranium Oxide and Salts

	Pounds.	Dollars
1891	.....	1,974
1901	.....	15,573
1913	.....	21,435
1914	.....	5,782
1915	.....	1,969
1916	.....	2,099
1917	.....	3,018
1918	.....	.....
1919	1,154	1,309
1920	.....	.....
1921	441	498
1922	6,894	5,487
1923	1,285	2,225
1924	11,039	12,696
1925	16,775	14,115
1926	27,476	25,490
1927	66,082	58,282
1928	103,539	87,479

Urea

	Pounds.	Dollars.
1914	17,981	8,798
1915	65,464	31,994
1916	79,172	32,498
1917	56,429	36,248
1918	22,777	17,479
1919	11,576	7,695
1920	18,693	10,784
1921	7,714	5,349
1922	136,161	34,953
1923	195,208	40,276
1924	66,318	9,642
1925	101,291	12,406
1926	302,783	27,308
1927	657,243	43,591
1928	768,438	47,508

Valerian, Crude

	Pounds.	Dollars
1919	54,847	34,450
1920	184,195	64,868
1921	23,084	4,624
1922	29,041	2,610
1923	75,867	7,314
1924	64,142	4,541
1925	75,555	5,792
1926	41,875	8,507
1927	95,175	16,706
1928	71,396	7,255

Valonia

	Pounds.	Dollars.
1913	5,295,762	79,610
1914	7,654,056	116,406
1915	6,352,190	88,061
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	150	5
1920	16,636,249	651,984
1921	11,723,598	331,443
1922	23,643,552	444,490
1923	15,070,543	298,704
1924	17,029,469	309,247
1925	24,806,008	404,501
1926	10,257,054	176,980
1927	20,132,216	380,253
1928	10,334,636	271,750

Valonia and Myrobalans Extract for Tanning

	Pounds	Dollars
1919	2,037,349	40,202
1920	2,058,075	59,788
1921	987,892	26,218
1922	1,663,783	35,654
1923	247,951	14,316
1924	658,620	21,659
1925	726,035	12,010
1926	103,446	7,255
1927	558,547	36,183
1928	537,270	39,248

Vanilla Beans

	Pounds	Dollars.
1871	14,764	113,212
1881	37,214	206,090
1891	171,024	594,949
1901	248,994	875,229
1913	1,049,617	2,641,574
1914	694,531	1,739,674
1915	749,146	1,839,998
1916	796,990	1,474,229
1917	733,665	1,583,328
1918	750,066	1,202,418
1919	1,003,072	1,487,308
1920	1,055,670	2,181,210
1921	977,004	1,811,398
1922	1,186,932	2,024,474
1923	1,244,107	2,830,300
1924	831,154	2,440,601
1925	688,799	2,560,843
1926	944,683	3,332,793
1927	974,922	2,408,147
1928	1,283,952	2,079,165

Vanillin

	Pounds.	Dollars.
1901	5,513	2,47[illegible]
1914	33,666	6,446
1915	451	98
1916	.....	.....
1917	.....	.....
1918	.....	.....
1919	.....	.....
1920	71	94
1921	36,178	22,530
1922	10,510	4,240
1923	3,514	1,448
1924	.....	.....
1925	1	6
1926	584	1,273
1927	334	1,426
1928	7,403	48,314

Varnish, Gold Size, or Japan

	Gallons.	Dollars.
1871	.....	252
1881	.....	2,789
1891	.....	1,618
1901	.....	.....
1914	.....	8,706
1915	.....	10,228
1916	.....	423
1917	.....	2,504
1918	.....	1,217
1919	2,005	8,192
1920	930	2,183
1921	1,019	4,456
1922	2,733	7,620

Included in "Varnish, All Other," after 1922.

Varnish, Spirit

	Gallons.	Dollars.
1891	2,472	7,456
1901	2,608	4,774
1914	10,127	24,329
1915	581	1,937
1916	1,318	6,874
1917	2,771	13,425
1918	1,286	3,033
1919	37	676
1920	732	3,531
1921	707	2,786
1922	2,985	12,431
1923	2,198	8,065
1924	1,407	5,260
1925	487	1,786
1926	231	1,208
1927	333	1,647
1928	403	2,127

Varnishes, All Other, Including Gold Size or Japans

	Gallons.	Dollars.
1871	23,862	72,266
1881	86,814	140,651
1891	32,600	91,111
1901	43,007	114,985
1914	16,888	31,032
1915	27,943	51,791
1916	25,542	62,776
1917	20,366	47,740
1918	10,923	24,340
1919	4,256	14,370
1920	24,271	78,507
1921	17,583	65,292
1922	22,758	76,686
1923	29,118	116,509
1924	17,339	61,701
1925	27,197	90,630
1926	22,095	55,308
1927	33,327	80,925
1928	31,834	51,587

Venetian Red

	Pounds.	Dollars.
1891	.....	19,138
1901	4,517,458	96,492
1914	3,858,611	33,077
1915	2,478,959	20,677
1916	1,687,616	12,947
1917	835,161	8,296
1918	433,638	5,135
1919	275,800	3,627
1920	278,673	4,524
1921	393,722	7,068
1922	72,519	2,246

Not stated after 1922.

Verdigris, or Acetate and Sub-Acetate of Copper.

	Pounds.	Dollars.
1871	331,657	56,873
1881	160,745	35,163
1891	212,019	32,016
1901	44,439	6,211
1914	19,009	2,530
1915	17,569	2,491
1916	81,005	15,648
1917	50,216	13,052
1918	26,837	8,094
1919	34,280	13,911
1920	9,909	2,122
1921	27,007	5,760
1922	19,569	3,478
1923	28,278	4,727
1924	62,306	4,787
1925	98,215	10,111
1926	49,945	6,136
1927	28,325	3,656
1928	25,638	4,079

Vermilion Reds (Containing Quicksilver)

	Pounds.	Dollars
1871	79,195	43,935
1881	14,243	7,392
1891	35,381	18,632
1901	110,961	27,958
1914	72,881	34,879
1915	95,659	58,697
1916	71,515	92,990
1917	17,557	24,170
1918	7,620	10,116
1919	9,556	17,439
1920	35,670	43,948
1921	22,203	22,868
1922	1,362	927
1923	48,783	39,284
1924	88,551	65,867
1925	145,405	125,842
1926	147,411	135,778
1927	182,188	187,444
1928	77,934	103,786

Wash Blue Containing Ultramarine

	Pounds.	Dollars
1891	166,327	23,407
1901	454,052	60,279
1914	.....	12,906
1915	.....	6,485
1916	.....	4,907
1917	.....	25,280
1918	.....	15,686
1919	53,703	11,281
1920	134,812	22,955
1921	83,437	17,206
1922	50,835	7,266

Included in "Ultramarine, etc.," after 1922

Wax, Carnauba

	Pounds.	Dollars.
*1928	2,813,304	809,833

* January-June, 1928.

Wax, Mineral or Vegetable

	Pounds.	Dollars.
1881	98,911	12,792
1891	1,486,125	127,159
1901	4,944,891	490,775

Stated separately for later years.

Wax, Mineral

	Pounds.	Dollars
1914	7,974,157	537,684
1915	6,284,757	401,500
1916	2,081,083	141,539
1917	2,054,722	150,241
1918	1,708,514	135,920
1919	2,680,155	313,371
1920	2,717,300	423,468
1921	4,757,396	433,076
1922	10,811,997	524,519
1923	7,974,396	334,741
1924	2,691,250	78,635
1925	4,425,721	272,948
1926	8,032,092	469,530
1927	7,543,995	564,027
1928	9,156,731	509,861

Wax, Vegetable

	Pounds.	Dollars
1914	4,336,276	1,043,337
1915	5,388,398	999,535
1916	9,594,111	1,551,996
1917	7,210,108	1,742,640
1918	8,636,881	2,670,022
1919	8,331,475	3,012,788
1920	9,949,567	3,681,707
1921	6,235,416	1,600,074
1922	7,242,520	1,012,731
1923	9,474,406	1,510,846
1924	8,037,186	1,158,855
1925	7,578,262	1,299,888
1926	7,709,677	1,917,960
1927	9,903,911	2,667,948
1928	6,228,927	1,409,142

White Lead (Basic Carbonate)

	Pounds.	Dollars.
1871	8,337,842	483,992
1881	1,068,031	60,133
1891	626,414	43,041
1901	379,338	21,993
1914	656,884	44,436
1915	514,876	35,743
1916	152,474	11,970
1917	57,045	5,054
1918	887	239
1919	21,153	2,477
1920	33,472	4,724
1921	225,930	24,690
1922	118,119	11,908
1923	524,776	50,568
1924	232,229	21,257
1925	126,151	12,876
1926	311,995	33,495
1927	276,030	25,594
1928	273,142	25,549

Whiting or Paris White, Dry, Ground and Bolted

	Tons.*	Dollars.
1871	5,219,396	24,710
1881	1,974,913	7,806
1891	1,042,518	4,239
1901	507,745	1,863
1914	2,361,605	10,453
1915	5,387,038	15,705
1916	3,655,123	14,459
1917	2,147,895	11,292
1918	4,908,295	31,033
1919	586,780	5,097
1920	3,639,237	28,610
1921	20,393,338	191,558
1922	22,391,035	114,784
1923	40,446,737	149,636
1924	46,301,120	148,651
1925	46,385,585	153,507
1926	42,999,399	142,075
1927	26,132	160,506
1928	31,220	185,465

*Quantity stated in pounds prior to 1927.

Witherite

	Pounds	Dollars
1891	.....	13,068
1901	.....	15,208
1914	1,223,926	7,927
1915	838,292	6,674
1916	1,714,414	20,446
1917	1,420,752	16,071
1918	1,194,268	20,146
1919	46,468	2,555
1920	1,195,824	22,465
1921	2,516,289	55,748
1922	2,692,290	41,589
1923	2,204,016	24,609
1924	4,283,948	54,978
1925	4,771,174	61,966
1926	6,189,123	76,008
1927	5,060,924	59,067
1928	8,120,395	78,048

Worm Gut, Unmanufactured

	Pounds	Dollars
1924	14,218	116,946
1925	10,307	96,468
1926	12,530	110,893
1927	10,723	105,002
1928	9,766	120,721

Wood Flour

	Pounds	Dollars
1914	15,171,972	84,751
1915	11,482,934	60,131
1916	13,731,979	74,476
1917	8,703,664	57,521
1918	3,738,486	43,882
1919	840,000	9,559
1920	2,922,063	41,355
1921	9,442,617	106,176
1922	14,481,469	88,512
1923	10,743,482	70,646
1924	11,757,382	84,475
1925	11,817,024	94,603
1926	14,004,866	97,891
1927	12,361,933	74,021
1928	14,264,449	90,477

Xylene

	Pounds.	Dollars.
1925	72,300	2,620
1926	192,890	11,581
1927	288,300	13,813
1928	216,300	8,733

Xylidin

	Pounds.	Dollars.
1920	56,047	41,287
1921	.....	.....
1922	.....	.....
1923	150	60
1924	.....	.....
1925	.....	.....
1926	.....	.....
1927	.....	.....
1928	.....	.....

Zaffer

	Pounds.	Dollars.
1920	220	14
1921	.....	.....
1922	.....	.....
1923	.....	.....
1924	.....	.....
1925	.....	.....
1926	110	40
1927	.....	.....
1928	.....	.....

Zinc Ores

	Zinc content. Pounds.	Dollars.
1913	25,214,528	526,173
1914	11,762,861	169,986
1915	14,259,176	321,135
1916	81,779,564	3,376,166
1917	293,958,919	8,186,015
1918	31,822,890	580,758
1919	63,636,426	1,347,067
1920	18,965,938	310,515
1921	41,628,246	587,126
1922	88,304,275	653,343
1923	3,904,965	88,610
1924	3,997,144	270,810
1925	746,554	36,808
1926	29,991	2,263
1927	301,225	12,655
1928	462,021	12,317

Zinc Ashes

	Pounds.	Dollars.
1871	2,075,899	103,493
1881	2,044,778	106,990

Not stated after 1881.

Zinc Chloride

	Pounds.	Dollars
1901	898,205	28,192
1913	1,252,319	37,078
1914	789,296	25,508
1915	194,250	5,860
1916	12,643	463
1917	6,216	629
1918	197,570	15,381
1919	.....	.....
1920	80,228	7,762
1921	4,054,862	235,274
1922	3,290,928	104,558
1923	1,761,272	66,590
1924	646,239	24,410
1925	823,541	43,792
1926	825,403	41,754
1927	1,240,997	53,246
1928	1,179,107	48,515

Zinc Dust

	Pounds.	Dollars.
1913	5,615,766	317,492
1914	4,788,433	223,775
1915	2,278,533	132,823
1916	1,365,705	255,128
1917	522,587	83,610
1918	263,428	25,100
1919	24,982	1,687
1920	98,321	8,066
1921	13,023	2,397
1922	202,066	5,470
1923	46,224	1,977
1924	52,660	4,307
1925	266,595	22,454
1926	38,209	4,013
1927	645	74
1928	155,131	9,787

Zinc Oxide, Dry

	Pounds.	Dollars.
1912	4,842,948	310,302
1913	6,148,129	388,483
*1914	1,408,162	88,416

* Figures are for July 1 to October 3, 1913.
Stated separately after October 3, 1913.

Zinc Oxide, Dry Powder

	Pounds	Dollars.
1891	2,629,858	136,388
1901	2,831,620	145,823
1914	5,315,867	309,106
1915	2,565,434	148,143
1916	1,441,299	244,934
1917	285,433	65,633
1918	294,736	55,302
1919	182,486	30,348
1920	1,549,644	174,658
1921	1,886,076	171,325
1922	5,821,525	352,018
1923	3,210,007	229,115
1924	2,436,456	176,811
1925	3,338,279	247,748
1926	2,099,143	186,275
1927	2,735,588	221,504
1928	2,672,516	212,929

Zinc Oxide, Ground in or Mixed with Oil or Water

	Pounds.	Dollars
1891	139,371	7,236
1901	53,851	4,192
1914	292,571	21,895
1915	156,451	11,526
1916	66,347	7,187
1917	14,089	1,226
1918	273	57
1919	7,088	1,039
1920	12,571	2,358
1921	89,641	11,008
1922	74,210	11,857
1923	120,674	15,205
1924	211,358	23,586
1925	235,112	29,023
1926	218,358	25,713
1927	186,312	22,925
1928	148,831	17,662

Zinc Sulphate (White Vitriol)

	Pounds.	Dollars.
1881	12,898	294
1891	.....	.....
1901	32,812	753
1913	23,778	817
1914	107,065	2,176
1915	68,940	1,027
1916	.....	.....
1917	26	44
1918	21	35
1919	221	113
1920	10	19
1921	100,829	3,314
1922	55,679	1,056
1923	28,413	1,771
1924	37,126	2,854
1925	17,988	1,359
1926	94,875	2,794
1927	177,285	6,053
1928	799,126	16,922

Zinc Sulphide

	Pounds.	Dollars.
1901	1,596,236	47,097
1913	5,163,642	144,812
1914	1,338,999	42,1[illegible]
1915	283,356	8,979
1916	96,402	7,368
1917	53,587	8,451
1918	7,098	4,535
1919	5,708	1,884
1920	15,271	5,476
1921	69,135	16,918
1922	73,334	5,977
1923	24,086	9,274
1924	8,044	4,562
1925	5,338	4,584
1926	15,947	6,087
1927	42,611	9,100
1928	213,441	32,934

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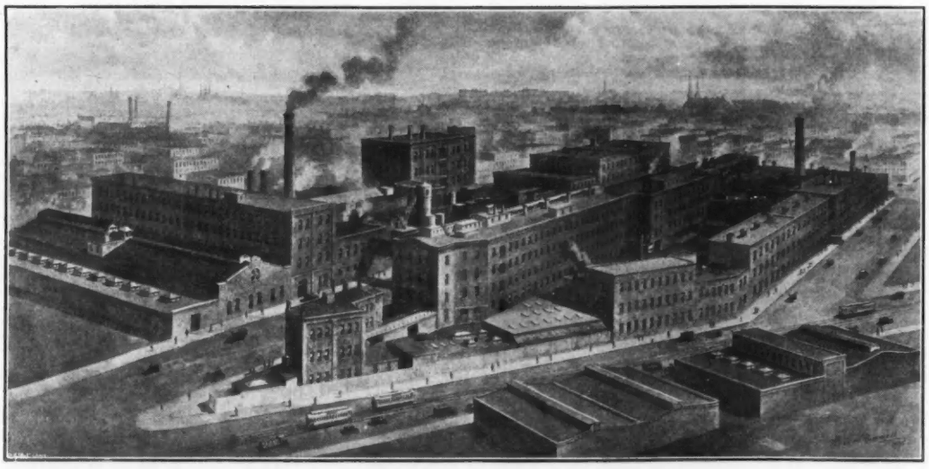

Industrial Chemicals: Market Review

The industrial chemical markets in 1928 were virtually replete with epoch-making developments both in point of record production as well as regards distribution. Shipments of the principal products were made in continuous, orderly and unprecedentedly large volume throughout the year. The stability of values during the greater part of the year in the face of competition from European producers gave consumers confidence to operate with a greater degree of freedom than they had enjoyed in preceding years. The numerous economies of manufacture introduced by some of the principal producers were passed along to consumers in the shape of somewhat lower prices in many instances, while in others competition between producers was responsible for the bringing out of easier conditions.

The almost complete absense of resistance to the contract terms which had been named by producers at the start of 1928 was a favorable omen in that the well established producers found themselves with a volume of business in their hands early in 1928 which eclipsed by a substantial margin anything which had theretofore been experienced. It also became evident quite early in the year that most of the principal manufacturing consumers would take full contract quotas of shipments, since nearly all of the principal lines of manufacturing activity, with the possible exception of the textile industry, which was disrupted by strikes, was forging ahead at a rapid rate. The first quarter of the chemical year was featured by a relative stability, as witness the comparative steadiness of average index numbers of chemicals during this period. Average prices for acids, however, were on the down grade, showing a net loss of 2.1 percent to 106.9. In the opinion of a number of marketers of industrial chemicals the first quarter of last year was considerably better as regards the volume of business than the same quarter in the preceding year. The general conditions in the acid group were perhaps a little better than those in chemicals, since sales reported by 75 percent of the trade were on a larger scale than in the preceding year. A comparison of industrial chemical market index numbers for the four quarters of the year and for December 1 showed:—

Jan. 1.	Apr. 1.	July 1.	Oct. 1.	Dec. 31.
158.7	157.1	157.2	155.7	155.2

Sales Volume Increases

The percentage of increase for the total volume of business accomplished in 1928 as compared with the year before was given by some authorities as about 3 percent. This could hardly be called a fair average for the chemical trades, many branches of which showed a much higher rate of gain in comparison with the records of the preceding year. Notwithstanding that the usual hesitancy incident to a presidential election started to show itself here and there during the second quarter of the year, business on the whole continued in a volume that was satisfactory from the standpoint of a majority of producers. The volume of business was being well maintained in the list of miscellaneous chemicals, as well as sodas, bleach ammonias, textile chemicals and acids, with collections in all trades, with the exception of textiles, running practically 100 percent. There was a minimum of unemployment in the chemical trades up to the end of the first half of the year, with high wages the rule in most industries and a corresponding general advance in the standards of living.

So far as the export outlet for chemicals was concerned, 1928 went its predecessor one better in the quantitative volume of business consummated, although the value of the exports appeared to be somewhat below the records of the previous year, due no doubt to a lower price range on a comprehensive list of products. Whereas at the half-year mark, our total favorable balance of trade amounted to something like $750,000,000, the forecast was made towards the close of the year that our trade balance for 1928 would possibly exceed the billion-dollar mark. These figures were borne out in preliminary estimates giving total exports as something in the vicinity of $5,129,132,000, a gain of 5 percent over 1927, while the import volume was $4,184,378,182, a loss of some $95,000,000 from the 1927 level. Industrial chemicals played an important part in this showing.

The marked recovery of Europe from its post-war depression did not, in the opinion of leading economists, constitute any real live threat to American business. This was in spite of statements that German export trade had grown some 22 percent in the preceding two years, while during the same interval French trade gained $86,000,000, Spanish $72,000,000, Italian $80,000,000, Swedish $62,000,000, or 39 percent, while Great Britain lost about $124,000,000, owing largely to her coal strike.

European Cartel Movement

Growth of the cartel movement in Europe, particularly in the chemical industry, was being watched closely here. Fears that were previously held that the American chemical industry was facing ruinous competition as a result of the cartel movement abroad appeared to have been dispelled quite early last year, however, when it became evident that the cartel idea offered more of defense than it did of offense. The various combines and conventions which were in control of the European markets had naturally made for rather stable conditions as regards prices. Announcement in July of the formation of the Societe Internationale pour Enterprises Chimiques was expected would mark a new basis for resumption of international chemical negotiations and it was thought likely that this company would acquire a substantial interest in some of the Italian and French enterprises for the purpose of strengthening it. Previously the German dye trust had made its agreement with French producers and with this out of the way an Austrian agreement was entered into covering sales of chemicals in the Balkans and Central Europe. The Austrian chemical industry in turn entered into an agreement with Czechoslovakia.

The various European agreements seemed to emphasize Germany's monopolistic tendencies on the Continent of Europe, these being generally at the expense of Belgium and France. It appeared that an increasing number of chemical companies were aligning themselves with the German I. G., which had already become an active selling agent for a great many so-called independent manufacturers, enjoying a virtual monopoly of those chemicals which were manufactured in Germany.

The enormous size of the I. G. and its many ramifications suggested a rather clumsy sales approach, but the fact seemed to be that it was more mobile in its sales appeal than a great many other European manufacturers. Apart from the resentment which was entertained in some European quarters therefore, over the monopolistic tendencies of the I. G., foreign producers seemed to be satisfied with the market outlook.

The negotiations to include British producers in the German cartel evidently came to naught, for the British concern of Brunner, Mond & Co., had been practically single handed in the attempts to organize the British chemical interests as a preliminary step towards their future national and international expansion. Great Britain on the whole appeared to be carrying on very satisfactorily, although her unemployment problem had not yet been solved. She was vitally concerned with the recovery of her pre-war export trade and to accomplish this she was prepared to emulate the example of American producers whose mass production had brought such tangible evidences of prosperity to the American worker. The enormous expansion of the American chemical industry since the world war, however, seemed to constitute the chief obstacle which British producers were compelled to circumvent. In the opinion of closely posted observers the lack of participation in the European agreements on the part of Great Britain would eventually result in three great groups of interests in the world's chemical field, i. e., the countries of Europe in association with Germany, the British Empire, composed of Great Britain and its dominions, and the United States of America.

The United States, it was held, would undoubtedly choose to hold aloof because of the character of its laws and because of its individualism. So far as our foreign trade was concerned it was held in some quarters that Germany was bound to prosecute vigorously her campaign for the Latin American markets. However, American chemical concerns were also seeking business diligently in the Latin American markets, so much so that in some quarters the charge was made that they had adopted the old German methods of dumping their products there. The trade generally considered it good practice to foster Latin American business last year. It was held that no logical reason for our entrance into any European chemical cartel existed for the reason that American producers could take advantage of the provisions of the Webb-Pomerene act which afforded an excellent opportunity for successful American participation in the world's chemical markets. The ambitions of the European cartel, so far as they related to penetration of this country, it was held, could be frustrated by means of the Wilson tariff act, a 34-year-old measure.

Centralizing Chemical Control

The same tendency towards closer co-operation between the chemical producers of Europe showed itself here to some extent. Perhaps the most important development in this respect was the absorption of the Grasselli Chemical Company by the E. I. du Pont de Nemours & Co., which more closely centralized the home markets. The merger was desirable from many standpoints, adding as it did substantially to the scope of operations of the du Pont Company. Just what disposition was to be made of the dyestuffs interests of the Grasselli Chemical Company was a matter which was expected to be settled at a later date. The tendency towards centralized control also manifested itself when it became known that the du Pont interests had gained the ascendency in the affairs of the United States Rubber Company and in some affiliated chemical concerns in New England. The latter development was of special interest in view of the announcement from Berlin that synthetic rubber would soon be produced in Germany and enter the world's markets in competition with the natural products. According to the German announcement a new catalyzer had been found which simplified the uniting of the elements of rubber which were found in coaltar. This all seemed to emphasize the important part which synthetic production was playing in the chemical industry, especially in the fields of artificial silks, leather, horn, shellac, wood alcohols, oils and glycerin. The synthetic rubber about to be placed on the market by Germany was declared to be the equal to natural rubber and much cheaper in production costs, which would permit its active competition with the natural product. The announcement from Germany was viewed with a good deal of skepticism in domestic circles as like the old cry of wolf, the same report had been heard more than a dozen times in the past decade, but the product had always failed to either equal virgin rubber or the cost of manufacture was so high as to render its manufacture impractical.

If there was any particular give to the market during the first quarter of the year it was largely because of the presence of foreign competition or because of the introduction by manufacturers of new economies which were being passed along to consumers in the shape of lower prices. Declines, while not pronounced in any special instance, appeared to out-number the advances about two to one during the first quarter of 1928. A number of the producers had actually availed themselves of the provisions of the Webb-Pomerene law and were penetrating foreign markets. Thus industrial chemical specialties to a value of over $4,000,000 were shipped out of the country during the first quarter of the year, a gain of 58 percent over the corresponding period of the year before. Included in the list was over 7,600,000 pounds of disinfectants, insecticides and fungicides; 650,000 pounds of other agricultural insecticides, fungicides and similar preparations; 1,730,000 pounds of household insecticides, deodorants, and germicides and other insecticides amounting to 5,200,000 pounds. Total chemical sales of the soda group reached about 121,000,000 pounds; soda borate, 45,000,000 pounds; and compressed and liquefied gases, 2,528,000 pounds. The imports were only about one-half as large as the exports, and were only about two-thirds as large as those in the corresponding period of the year before.

Copper Sulphate Has Big Year

The action of the copper sulphate market early last year was such as to encourage the belief that a season of underlying strength was in prospect. In the first week of January electrolytic copper had been selling on the basis of 14c. to 14⅛c. per pound, delivered to the Connecticut Valley, which was an advance of about 1c. per pound over the prices that had ruled earlier in the fall. A big demand was running for the sulphate from Latin-American sources at the time, and producers advanced the sulphate 5c. per 100 pounds to $5.05 per 100 pounds, car lots, works, for the purpose of protecting their position. March deliveries at the same time were priced at $5.10 per 100 pounds. Had the producers at this time been willing to quote beyond sixty days' shipment they could have closed on the requirements of a considerable portion of the insecticide trade. As it was they were having their hands full in endeavoring to take care of comparatively large Latin-American shipments during the early part of last year, and they continued to restrict their offerings to prompt or nearby shipment, due to their inability to gauge for any length of time what their costs were likely to be. The Pennsylvania trade had been quick to anticipate its requirements in the early months of the year, when considerable sulphate had already been shipped to Florida. Buyers in Maine and Long Island, however, were holding off in the hope of securing better prices. Toward the middle of March the copper position started to show substantial improvement, with an advance of ⅜c. per pound up to the end of March, as foreign buyers' orders had put in appearance in some volume. Even at this early date a large export tonnage was moving in copper, and in the middle of April, when copper touched 14¼c. per pound, the producers announced another 10c. increase in sulphate, which established the market at $5.15 per 100 pounds, car lots, works, and $5.25 to $5.95 per 100 pounds, less than car lots, works. The agricultural season was in full sway in May, and large export and domestic shipments were being arranged for various points. Canada was taking at least twice as much sulphate as she had in the previous season, while the inquiries from Argentina were continuing quite heavy. On May 17 another advance of 15c. per 100 pounds was named, which put the price up to $5.30 per 100 pounds, car lots, and $5.50 to $6 per 100 pounds in less than car lots. The copper market continued to show symptoms of underlying strength under heavy domestic and foreign purchases. Consumers on the Pacific Coast had started covering their requirements at this time, while consumers in the South and on Long Island appeared to have what stocks they required for immediate needs. By the early part of July most of the consumers on Long Island had covered their needs, and at this time the potato crop there was a splendid sight. The distribution throughout the month of July was on an enormous scale, with repeat orders the rule from numerous directions. At the end of July there were evidences that the season, which had started early in February, had about run its course. The sulphate market reverted to its normal routine during August, although copper continued in an extremely firm position during the entire fall season. The metal was, in fact, showing steady gains during the fall months, and had it been an active season in sulphate the producers would have been warranted in advancing prices ⅜c. further.

As it was, they continued their schedules until the early part of November, when, in consequence of the advance in copper, they were again forced to advance their contract schedules, this time to the extent of 20c. per 100 pounds, which established the price at the end of the year at $5.50 per 100 pounds, f.o.b. this city, car-lot basis. There had been an advance of 1½c. to 2c. in copper since the previous revision, and the copper content of the blue vitriol had appreciated some 38c. per 100 pounds in the interim. At the end of the year copper was quoted at 16¼c. per pound, delivered Connecticut Valley points, and copper for export was quoted at 16½c., c.i.f. Hamburg. The copper industry had closed its best year with a production of about 1,269,000 tons, consumption 1,663,089 tons, and stocks at the end of the year at only 62,153 tons, the smallest in six years. The actual figures for total refined production in 1928 in North and South America amounted to 1,627,849 tons, as against 1,476,506 tons in 1927 and 1,440,454 tons in 1926. Total shipments in 1928 of 1,657,681 tons compared with 1,466,709 tons in 1927 and 1,428,035 tons in 1926. Domestic shipments of 983,460 tons in 1928 compared with 824,844 tons in 1927 and 902,174 tons in 1926. Foreign shipments of 674,221 tons in 1928 compared with 641,865 tons in 1927 and 525,861 tons in 1926.

Record Shipments of Alkalies

Record breaking sales and shipments were the rule throughout last season in the market for alkali products. As went caustic soda and soda ash so went a great many other industries since these chemicals were regarded as second only to steel as barometers for general trade conditions over the country. Early in 1928 the producer's schedules for caustic soda and soda ash became effective providing for concessions of 2½c. to 5c. per 100 pounds on soda ash and 5c. to 10c. per 100 pounds on caustic soda from the levels that had been operative in the preceding year. The rank and file of consumers showed confidence in the market throughout the year and shipments were going through in uninterrupted volume. In addition to the large shipments which were being taken by the soap, paper, glass, metallurgical, and other industries there was a large export outlet during the greater part of the year. By the end of the first quarter it was clear that chemical output in general had expanded to the extent of about 18 percent and that this represented the gain which had been seen in the produc-

tion of the alkalies. The summer season was marked by the usual falling off in shipments incident to a let down in manufacturing activity in industries the country over. The suspension in the textile industry made for quieter conditions until the fall season. Late in the fall, however, sales and shipments were again of record breaking proportions and new contracts for 1929 deliveries which were being taken at prices that were unchanged from the previous year were being written in record breaking volume. The demand from such diversified trades as soap, hardware, automotive and metallurgical reached record totals. An enormous demand was also in progress from petroleum refiners who were operating at a fast clip to lay in reserves for another season. Demand was along such comprehensive lines late in the fall season that an actual shortage of the chemical started to develop during the last two months of the year and a number of the large producers were understocked to the point where they held no excess stocks. Not a few of the producers had actually oversold their prospective production by the middle of December resulting in a scramble to cover the shortage. Prices generally remained firm, but the car lot contract schedule remained at:—Light soda ash, $1.15 per 100 pounds bulk; $1.32, bags; $1.55 per 100 pounds, barrels; dense, $1.22½ bulk; $1.37½, bags; $1.55 per 100 pounds, barrels; extra light, $1.32 bags; $1.67½, barrels with spot cars quoted 2½c. per 100 pounds higher. The schedule for caustic soda in car lots included solid, $2.90 per 100 pounds; flake and ground, $3.30; liquid, $2.55 with spot cars quoted 5c. per 100 pounds net higher. The outlook at the end of the year was that alkali production would be stepped up generally to take care of the country's increased requirements. Our exports of caustic soda increased over 20,500,000 pounds during the first eleven months of last year to about 109,500,000 pounds. American producers had made a better showing in the matter of exports than had the British or German. In 1927 British alkali producers had been able to increase their exports some 25 percent, it will be recalled.

Lime Acetate Shortage Acute

Lime acetate was in a steady position throughout the first seven months of the year. The producers had steadily maintained their quotations at $3.50 per 100 pounds since November, 1926. At the end of July it became clear that declining wood products production at a time when demand was running full warranted a higher market, and an advance of 50c. per 100 pounds was placed into effect at this time, which established the price basis at $4 per 100 pounds. It developed that the shipments of lime acetate had been well ahead of production throughout the first seven months of the year, and as an unusually heavy demand continued to run from the lacquer materials manufacturers as well as from the producers of artificial silks, shipments were continuing to run behind well into the Fall months. Coincident with the 50c. advance in the raw material in August, there was a corresponding uplift in the various grades of acetic acid, which were advanced to the extent of 25c. per 100 pounds for the 28 percent, 27c. for the 30 percent, 32c. for the 36 percent, 54c. for the 60 percent, 63c. for the 70 percent, 72c. for the 80 percent and 89c. for the glacial 99 percent. It was believed that wood plants would be nearing maximum production towards the close of the year, but the shortage of lime acetate had become so acute by November that another advance of 50c. per 100 pounds was placed into effect at this time, which established the market at $4.50, the best point it had touched in a decade, or since 1918, when the price was $6.05 per 100 pounds. The producers of acetic acid encountered difficulty in securing adequate stocks of lime, and in keeping with the further increase in raw material costs, advanced their schedule further, the 28 percent going up 25c. per 100 pounds more, the 30 percent 27c., the 36 percent 32c., the 56 percent 50c., the 60 percent 53.5c., the 70 percent 62.5c., the 80 percent 71½c., the 84 percent 75c. and the glacial 89c. per 100 pounds. The wood plants had gotten into the busiest season of the year and were still behind in their schedules, with the outlook that maximum production could not be achieved until snow was on the ground, facilitating the movement of logs. It developed that the total production of lime acetate in the United States during the first eleven months of 1928 had amounted to 117,662,158 pounds, contrasted with 143,841,266 pounds in the same time in 1927. Shipments in the same eleven months of 1928 were 131,414,161 pounds, whereas in the year before they were 143,862,457 pounds. The available stocks at the end of the eleven months' period in 1928 were 139,989,580 pounds, compared with 223,286,825 pounds in the year before. Whereas as high as 1,113 wood plants had suspended operations as late as September, 1928, there had been a steady gain in the rate of operation of such plants until only 400 were idle during the month of November. Despite the increased operations, the total stocks of wood on hand at the end of November stood at 422,640 cords, which was the best showing made since the spring of 1928, although the identical figure for the year before was 452,246 cords. The actual consumption of wood during the month of November jumped to 68,573 cords, whereas two months previously it had been only 45,334 cords. From the low point last May, when stocks of wood on hand had totaled but 489,388 cords, the total had jumped at the end of November to 531,278 cords. The production of synthetic glacial acetic acid was under way from Niagara Falls at the close of the year.

Ammonia Products Point Higher

Since the open winter of 1928 had resulted in a much smaller cut of natural ice, the producers of anhydrous ammonia during the Spring of last year were quite confident in the belief there would be tremendous demands for artificial ice. Hence they placed an advance of ½c. per pound into effect in anhydrous ammonia during March. This represented a sweeping upward revision covering the entire East with the exception of Arizona. This schedule held throughout the year, and a substantial volume of business was reported to have been placed. As customary, the demand for refrigerator purposes eased off during the Fall months, but the tone of the market had strengthened again in November, when the producers offered contracts for 1929 deliveries on the basis of 13½c. per pound delivered this city and 14½c. for delivery at upstate points. Prices over the country had been advanced to the extent of ½c. per pound since a big consumption was looked forward to. A firm condition of affairs also ruled the market for aqua ammonia. The price of this product had been advanced ¼c. in March to 2½c. per pound for the 26 degrees in tank cars. The quotation of 3c. per pound drums, car lots, and 3¼c. drums, less than car lots, held at this time. The fact that so large a proportion of the plants which had been out-turning aqua ammonia had turned their output over to sulphate of ammonia production caused a firm condition of affairs to rule the market during the balance of the year.

Tariff Affects Fluorspar

Effective November 16 by presidential proclamation the higher tariff rate of $8.40 per ton became effective on fluorspar containing not more than 93 percent of calcium fluoride. The Tariff Commission's investigation was confined to the metallurgical grades as cost of production data adequate for comparison could not be secured for the acid and ceramics grades. There was a scramble to bring in imported fluorspar before the appearance of cold weather. In fact, importations embraced all kinds, including British, German, French and Italian. In view of the higher prices ruling, it was expected that importers would stock the material throughout the winter months. Whereas quotations ranging from $16 to $17.50 per ton had ruled for foreign 85 and 5 fluorspar, the price was later increased to take in the range of $20.40 to $20.65 per ton. At last accounts the only foreign fluorspar of any importance which was being received was that of South African 98 percent and 1½ to 2 percent acid spar, to be used for making hydrofluoric acid. The enamel and glass manufacturers who buy the 95 to 96 percent grades were reported to be taking hold in a fair way.

The barium products held comparatively steady during the first six months of the year. In July the price was jacked up about $5 per ton in the case of the chloride to offset a similar increase in the import impost. Cost of bringing in the foreign had gone up to $63 per ton in August. During the fall the domestic producers were well oversold and stronger conditions were general throughout the markets. Late in the year domestic producers were signing contracts for next year's deliveries and were maintaining their asked prices on the chloride at $63 per ton, car lots, bags, or barrels, while less car lots were quoted within the range of $68 to $70 per ton bags or barrels. Barium carbonate held at $57.50 to $60 per ton either for the domestic or the foreign. Hydrate was quoted in some quarters of the chemical trade at 4¾c. to 5½c. per pound for the white crystals in 500-pound casks, while the sulphate U.S.P. X for X-ray was held within the range of 14c. to 15c. per pound.

Sal Ammoniac Under Pressure

Weakness in sal ammoniac resulted early last year from the keen foreign

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competition which had been evident. Early in the year producers cut prices 15c. per 100 pounds to $4.70 per 100 pounds on contract and $4.80 for spot, while the gray was cut to $5.40 per 100 pounds car lots, drums, and $5.50 for less than car lots. This was followed by another 10c. per hundred pounds drop in the white. Foreign goods had been cutting under the domestic and this was designed to minimize the competition. The last price basis was continued until quite late in the fall, but in the closing days of November producers announced another cut of 10c. per 100 pounds in the white which established it at $4.50 per 100 pounds car lots contracts, works, when shipped from this city, Boston or Philadelphia, and $4.60 per 100 pounds when shipped to inland points. Deliveries to the battery manufacturers were in excellent volume throughout the last half of the year when it developed that the exportation of batteries from 1914 to 1917 had increased some 1,300 percent while the exports for the first six months of 1928 had been nearly as great as for the entire year 1924. The foreign markets were absorbing flash light batteries at the rate of 23,500,000 per annum.

Calcium and Magnesia Salts Off

Business in calcium chloride began in big volume early in 1928. Actuated by manufacturing economies producers placed a reduction of $1 per ton into effect both in the flake and the solid early in February establishing the market for solid on the basis of $20 per ton f.o.b. works while the flake was held at $25 per ton car lots, works. A reduction of 10c. per 100 pounds was made in the less than car lot price on flake, establishing a new price basis of $1.94 to $2.09 per 100 pounds in bags or drums. The solid in less than car lots was reduced 5c. to $1.69 to $1.84 per 100 pounds in drums. The product met an exceptionally good demand for highway work throughout the open season which extended from March until the late fall months. The demand both from Eastern and Western points held good as the product was finding an enormous outlet as a dust laying material. A backward season slowed up the deliveries to some extent, but after the first of May the demand was in full sway and active conditions were the general rule as the good roads movement had reached practically all important centers of population over the country and enormous quantities were required for road renovating purposes. The paper trade proved to be a good buyer of alumina sulphate last year. A 10 point concession established the price at $1.40 to $1.55 per 100 pounds, bags, works, early in the year and this basis held throughout the twelve months' period.

Chloride of magnesia took a $1 decline in February to $36 and $37 per ton in barrels at the works and held at this basis during the year. There was competition between domestic and foreign glauber's salts early in the year resulting in a 5c. concession early in February. This was followed by another similar concession later on in the year until the market was established at basis of $1. At the same time, the foreign could be had for 70c. per 100 pounds. Imports throughout 1928 continued along fairly liberal lines.

Irregular Trend in Chlorates

Along in March the chlorates started to show a declining trend. The foreign potash was cut to the extent of ¼c. per pound to 7½c. per pound, while the domestic producers continued to adhere to a basis of 8c. per pound. Holders of the foreign continued to offer their product at 7½c. throughout the year, but in the closing days of the year they were disposed to exact fractional premiums. Chlorate of soda was cut to the extent of ¾c. per pound by the **domestic producers** in the Spring of the year to 5¾c. to 6c. per pound, although dealers in the foreign were quoting 6½c. to 7c. per pound, which price levels continued to rule throughout the year. The domestic producers brought their prices for soda chlorate back to a basis of 6½c. per pound towards the close of the year. At the same time they were quoting 8½c. per pound for potash chlorate which was sold ahead. An 11c. per pound reduction took place in soda sulphocyanide during April which established it at 29c. per pound in lots of 2,000 pounds, 31c. in lots of 300 pounds and 37c. per pound in 25 pound jars. At the same time the purified grades of soda tungstate were reduced sharply and could be had for 65c. per pound in lots of 2,000 pounds, 67c. in lots of 1,000 pounds, 69c. in 400 pound barrels, and 78c. in 100 pound kegs. Carbon tetrachloride underwent a reduction of ½c. in April which established it at 6¼c. per pound, car lots, drums, and 6½c. to 10c. for less than car lots, drums.

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Phosphorus and Ammonias

The holiday demand from fireworks manufacturers for red phosphorus had subsided by the end of June when producers announced a reduction of 5c. per pound, making the revised quotation 55c. per pound in 100 pound tins in cases. Fireworks manufacturers had already provided for the bulk of their requirements and the market was reverting to its former narrow position since the outlet even during normal times was only a restricted one for the account of the match trade. One seller had even shaded the inside quotation of 55c., although in some quarters of the trade it was thought that the low priced offers represented off quality stock. The usual outlets for yellow phosphorus were large and producers generally were holding it for 35c. to 40c. per pound in casks.

In July the producers of ammonia sulphocyanide made a deep cut in the price of this product when they reduced prices to the extent of 19c. per pound in lots of 2,000 pounds to 36c. per pound. They quoted 37c. in lots of 1,000 pounds, 40c. in lots of 300 pounds in barrels, 42c. in 100 pound lots in kegs, and 48c. per pound in 25 pound lots in jars. In October there was another cut to 32½c. in 100 pound drums and 37c. in tins.

During the same month the producers of ammonia bicarbonate reconstructed their scheduled prices by announcing a 25c. per 100 pounds reduction. Foreign competition was quite a factor and this prompted the producers to base their schedules on costs of importation at such cities as Boston, Philadelphia, San Francisco and this city as base points. Prices consequently were on a basis of $6 per 100 pounds f. o. b. points of importation, car lots barrels, contracts, and $6.25 per 100 pounds less than car lots, contracts, barrels. Under the new method of quoting the chemical took the lowest importer's freight rate to a point of destination. Car lot quotations both for contract and spot bicarbonate of ammonia remained the same at $6 per 100 pounds, although on less than car lot business prompt shipment was quoted at $6.50 per 100 pounds, plus the importer's less than car lot freight rate to point of destination. Whereas producer's former terms were a discount of ½ percent in 10 to 30 days, they now named 1 percent, 10 to 30 days. The new price schedules placed the product in a position where it was competing with the foreign. However, the reduction then placed into effect was only to be the first of a series depending on the reaction of consumers to the new schedule. There was enough bicarbonate of ammonia capacity, it was admitted, to take care of two or three times the volume of domestic buying.

Methyl chloride was meeting a good demand for refrigeration purposes during the hot summer months at 45c. per pound in cylinders, which was 10c. under previous schedules. Late in the summer months, when the New England textile mills had been tied up for a period of about three months, it developed that the usual outlets for sulphide of soda had not been responsive and that stocks had been piling up at different points. As a result of this the 60 percent broken was cut to the extent of 50c. per 100 pounds, and distressed solid was reported to be on offer at as low as $2 per 100 pounds. In September the domestic producers of soda silicofluoride, co-incident with the effectiveness of a higher duty, advanced their prices to a basis of 4¾c. per pound, car lots, works, and 5c. per pound for less than car lot quantities. The duty was based on 37½ percent of the American valuation, which if figured on the basis of 5c. per pound would work out to 1⅞c. per pound. Sales in lots of 15 to 20 barrels were being arranged in some quarters of the trade on the basis of 5⅛c. to 5⅜c. per pound. Later there was a further advance to 5¼c. per pound, car lot, barrels, and 5½c. for smaller quantities, as it was the understanding that the duty would be based on 25 percent of the American valuation after September 30, which meant an advance of about ½c. per pound in the rate.

Big Boost in Niter Cake

A precipitate upward movement featured the market for niter cake early in the fall. During the first week of October prices were raised to the extent of $5.50 per ton, virtually doubling the price to $12 and $18 per ton. This advance held to the end of the year, whereas six months previously the producers were quite willing to give the product away for the expense of loading. Producers attributed the bulge in the market to the changed methods of acid production, which had resulted in a much smaller recovery of niter cake. A curtailment of the volume of importations of nitrate of soda was held to be responsible in some measure for the tighter situation which had developed. In this connection it was interesting to note that nitrate of soda had advanced to the extent of 5c. per 100 pounds on the delay in the arrival of several cargoes.

The producers of red and yellow prussiates of potash as well as yellow prussiate of soda took hold of the market early in October and announced a general increase amounting to 1c. per pound in the contract levels. One maker quoted 18½c. to 19c. per pound for yellow prussiate of potash and 39c. to 39½c. per pound for the red. At the same time the producers of yellow prussiate of soda raised prices 1c. to 11½c. a pound, casks, works. The imported product was reported to be practically off the market. Imports of yellow prussiate of soda in the first eight months of this year amounted to 1,382,-297 pounds, compared with 1,400,395 pounds in the same time the year before.

Makers Reduce Liquid Chlorine

Liquid chlorine could be bought at basis of 3¾c. per pound, car lots, tanks, for the first seven months of the year. In August a ¼c. reduction to 3½c. per pound was announced, which was followed by another reduction of ½c. per pound in October, which established the market for 1929 deliveries at the 3c. basis. The price in single tankcars or multiple unit cars was established at 3c. per pound either on contract or for prompt shipment. The ¼c. per pound differential which had prevailed was only a theoretical one, since close to 95 percent of all the buyers of the product were under contract. A reduction was also announced in quotations in cylinders, with either contract or prompt shipment goods quoted at 4½c. per pound, car lots, works, while in lots of 2,000 pounds or more a price of 7½c. per pound was named, and for less than 2,000 pounds 8½c. per pound. The quotations for cylinders was really 1c. per pound lower than it had been previously, since producers had been privately accepting a concession of ½c. per pound from their list prices. Back of the lower market was the expectation that new producers would soon be in the field.

During the fall months producers of nickel chloride became oversold because of the urgent demand from the automotive industry. Hence they advanced their prices to 20c. to 21½c. per pound in barrels. Late in December double and single nickel salts were advanced 3½c. per pound to a basis of 13c. per pound in barrels. A heavy demand was running from the platers and the producers had no more goods to offer for 1928 delivery. The contract quotation in car lots for 1929 delivery was 12c. per pound, while for less than car lots 12½c. per pound was quoted.

At the close of the year ammonia persulphate was advanced 4c. and established at 31c. per pound in 500-pound barrels, and 34c. in 100-pound kegs. Potash oxalate took an advance of 4c. to 20½c. in 2,000-pound lots, 22c. in 250-pound barrels, and 24c. in 100-pound kegs. Throughout the year copper, lead, zinc, antimony and tin salts fluctuated in proportion to the changes in the metal markets.

Competition in Boric Acid

One of the interesting features of the market for acids last year was the keen competition between domestic producers of boric acid. The producers held to their scheduled contract basis of 8c. per pound for the 99½ percent car lots, sacks, during the first six months of the year. In June producers announced a reduction of 1½c. per pound to a basis of 6½c. to 7c. per pound car lots, sacks. While this price basis was continued to the end of the year, the undertone of the market was a weak one as competition was rife throughout the year. The announcement from domestic producers of an advance of 1½c. per pound in quotations for citric acid, establishing the market at 46c. per pound for the crystals in barrels and 46½c. per pound in kegs with the powdered quoted at 47c. per pound in barrels and 47½c. per pound in kegs, was the outstanding feature during the course of the spring trading.

Offsetting the weakness in boric was the great underlying strength in a number of others acids. Throughout 1928 all the mineral acids continued to point higher under extensive buying, while substantial advances were scored for acetic and tartaric, while chromic and oxalic were showing underlying strength.

Acid Index Shows Decline

Comparative index numbers compiled from a list of twelve typical acids on the basis of a normal of 100 for August 1, 1914, for the four quarters of the year, as well as for December 31 are appended:

Jan. 1.	Apr. 1.	July 1.	Oct. 1.	Dec. 31.
109.0	106.9	107.0	106.9	106.6

The various advances which were scored in argols during the year which finally established the cost of the 30 percent at 7½c. per pound in casks, and the 80 percent at 16½c. to 17c. per pound in casks were incidental in producing a net gain of 2½c. per pound in tartaric acid, which was quoted by the producers on the basis of 38½c. per pound for the U.S.P. domestic crystals in barrels. The market had reacted slightly from the best point in February, but producers advanced it 1c. per pound in March, 1c. in April and ½c. per pound in October. There was a continued tone of strength in the market for all of the mineral acids, which were being bought in increasing quantities, especially by the metallurgical industries. The customary competition between fertilizer manufacturers and Eastern manufacturers of mineral acids did not show itself last year to any extent, as the producers were well sold ahead throughout the year. The huge comsumption in sulphuric acid toward the close of the year when petroleum refiners were utilizing nearly twice as much as they would under normal conditions for treatment of some low grade crude oils from West Texas and Venezuela was one of the features of the market. The rate of buying in all mineral acids in fact was along broad enough lines to take up all the production, as it became available. There was a steady increase in the call for chromic acid during the year. The entrance of new producers into the field eased the price situation to the extent that offerings became available at 20c. per pound in round lots of 20,000 pounds or more and 21c. per pound in 1,000-pound lots. This represented a decline of 1c. per pound, and a widespread demand from the automotive industry was in progress at the lower figure.

Rubber Accelerators Decline

In recognition of the voiding of patents covering the use of disubstituted guanidines as accelerators of the vulcanization of rubber by the Supreme Court of the United States early in April, a 4c. per pound reduction was announced at this time in diphenylguanidin, while diorthotoluolguanidin was reduced 36c. per pound and established at 49c. per pound in drums. Later in the year another cut of 5c. was named in diphenylguanidin, which established the price at 35c. in lots of 1,000 pounds, while diorthotoluolguanidin was reduced 4c. and priced at 44c. per pound in lots of 1,000 pounds, and 46c. in instances where the goods had to be repacked.

Insecticide, Fungicides, Etc.

The year in insecticides and fungicides was marked by new activity in connection with the usage of these products. Early in the Spring of last year the producers of paris green advanced prices sharply, as jobbers had started taking hold of the product in a large way. The new price in lots of 2,000 to 10,000 pounds was 23c. per pound in bulk. A discount of 15 percent was quoted to jobbers, which made the price to them in bulk lots 19.55c. per pound. In lots of 250 pounds in cases the schedule of quotations stood at 23c. per pound; in lots of 100 pounds in kegs, 25c. per pound; in buckets of 14, or 28 pounds, quotations were 27c.; lots of 2 to 5 pounds, 29c.; one pound lots, 31c.; ½-pounds lots, 33c.; and ¼-pound lots, 35c. per pound. But few makers were putting up the ½- or ¼-pound sizes, with the result that there was quite a scarcity of these.

Good progress was made during the year in the absorption of the large carry-over stocks of calcium arsenate from the previous season. One of the new methods of pest extermination adopted last year was the fight against the malarial mosquito through airplane dusting. New economies in the production of nicotine sulphate were passed along to consumers early in the year in the shape of a reduction of $1.15 per ten-pound tin, establishing the price at $9.85 per tin. Early reports of the prevalence of the boll weevil in the cotton producing areas led to the belief that large quantities of calcium arsenate and other insecticides would be required during the year for poisoning purposes, but it subsequently developed that weevil damage was not as great as had been anticipated. The early Government reports only showed a moderate weevil emergence. Shipments of insecticides to the South had been practically completed by the middle of July, after which date there was little additional business in sight. The movement of copper carbonate to Northwestern wheat growers got under way in July, and an upward tendency started to feature the market. When the early cotton estimates came out in September, estimating a crop of about 14,-500,000 to 15,500,000 bales, the hope was still entertained in some quarters that belated insecticide buying would put in an appearance, but the season came to an abrupt termination with the close of September and the insecticide producers were disappointed in this outlook. At the end of October producers were quoting 1929 contract schedules for lead arsenate, calcium arsenate and Bordeaux mixture at prices which were identical with those of the preceding year, and some of them were booking rather substantial sized contracts.

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Industrial Chemicals: Record of Prices

Alum, Ammonia, Lump

October 18, 1871, the price was $2.15 per 100 pounds; 1881, $2.15; 1891, $1.50; 1901, $1.75; 1911, $1.75; 1913, $1.75; 1918, September, $8.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$3.35	$3.35	$3.25	$3.25
February	3.35	3.35	3.25	3.25
March	3.35	3.35	3.25	3.25
April	3.35	3.35	3.25	3.25
May	3.35	3.35	3.25	3.25
June	3.35	3.35	3.25	3.25
July	3.35	3.35	3.25	3.25
August	3.35	3.35	3.25	3.25
September	3.35	3.35	3.25	3.25
October	3.45	3.25	3.25	3.25
November	3.25	3.25	3.25	3.25
December	3.25	3.25	3.25	3.25
Year	3.45	3.25	3.25	3.25

Aluminum Sulphate, Commercial

August 20, 1894, the price was $1.25 per 100 pounds; 1901, $1.35; 1911, 90c.; 1913, 90c.; 1917, November, $3.50.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.40	$1.40	$1.40	$1.40
February	1.40	1.40	1.40	1.40
March	1.40	1.40	1.40	1.40
April	1.40	1.40	1.40	1.40
May	1.40	1.40	1.40	1.40
June	1.40	1.40	1.40	1.40
July	1.40	1.40	1.40	1.40
August	1.40	1.40	1.40	1.40
September	1.40	1.40	1.40	1.40
October	1.40	1.40	1.40	1.40
November	1.40	1.40	1.40	1.40
December	1.40	1.40	1.40	1.40
Year	1.40	1.40	1.40	1.40

Aluminum Sulphate, Iron-Free

August 20, 1894, the price was $1.75 per 100 pounds; 1901, $1.75; 1911, $1.75; 1913, $1.25; 1918, October, $4.50.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.00	$2.00	$2.00	$1.90
February	2.00	2.00	1.90	1.90
March	2.00	2.00	1.90	1.90
April	2.00	2.00	1.90	1.90
May	2.00	2.00	1.90	1.90
June	2.00	2.00	1.90	1.90
July	2.00	2.00	1.90	1.90
August	2.00	2.00	1.90	1.90
September	2.00	2.00	1.90	1.90
October	2.00	2.00	1.90	1.90
November	2.00	2.00	1.90	1.90
December	2.00	2.00	1.90	1.90
Year	2.00	2.00	2.00	1.90

Ammonia, Aqua, 26 Degrees

October 18, 1871, the price was 10½c. to 11c. per pound; 1881, 9½c.; 1891, 9½c.; 1901, 5½c.; 1911, 4¾c.; 1913, 4¾c.; 1918, May, 30c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.02¾	$0.02¾	$0.02¼	$0.02¼
February	.02¾	.02¾	.02¼	.02¼
March	.02¾	.02¾	.02½	.02½
April	.02¾	.02¾	.02½	.02½
May	.02¾	.02¾	.02½	.02½
June	.02¾	.02¾	.02½	.02½
July	.02¾	.02¾	.02½	.02½
August	.02¾	.02¾	.02½	.02½
September	.02¾	.02¾	.02½	.02½
October	.02¾	.02¾	.02½	.02½
November	.03¼	.02¾	.02½	.02½
December	.03¼	.03	.02½	.02½
Year	.03¼	.02¾	.02½	.02¼

Ammoniac, Sal, Lump

October 18, 1871, the price was 10c. to 10¼c. per pound; 1881, 11c. to 12c.; 1891, 8¼c. to 8½c.; 1901, 5¾c. to 6c.; 1911, 4¾c. to 6¼c.; 1917, July, 22c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.11½	$0.11½	$0.10½	$0.10½
February	.11½	.11½	.10½	.10½
March	.11½	.11½	.10½	.10½
April	.11½	.11½	.10½	.10½
May	.11½	.11½	.10½	.10½
June	.11½	.11	.10½	.10½
July	.11	.11	.10½	.10½
August	.11	.11	.10½	.10½
September	.11	.11	.10½	.10½
October	.11	.11	.10¼	.10½
November	.11	.10½	.10½	.10½
December	.11	.10½	.10½	.10½
Year	.11½	.10½	.10½	.10½

Antimony, Needle

October 18, 1871, the price was 11¼c. per pound; 1881, 10¾c.; 1891, 8¼c.; 1901, 7¾c.; 1911, 5½c.; 1913, 4½c.; 1917, January, 20c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.14	$0.13	$0.13	$0.13
February	.13	.12	.13	.13
March	.12	.12	.13	.13
April	.12	.12	.13	.13
May	.15	.12	.13	.13
June	.15	.15	.13	.13
July	.15	.15	.12	.12
August	.15	.15	.12	.12
September	.15	.15	.12	.12
October	.16	.13	.12	.12
November	.13	.13	.12	.12
December	.13	.13	.12	.12
Year	.16	.12	.13	.12

Argols, Crude, 30 Percent

October 18, 1871, the price was 6c. per pound; 1881, 4½c.; 1891, 2¾c.; 1901, 2¼c.; 1913, 3c.; 1915, January, 18c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.03	$0.03	$0.08	$0.08
February	.03	.03	.08	.08
March	.03	.03	.09½	.08
April	.07	.06	.09½	.09½
May	.08	.07	.09½	.09½
June	.08	.08	.09½	.09½
July	.08	.08	.09½	.09½
August	.08	.08	.09½	.09½
September	.08	.08	.09½	.07½
October	.08	.08	.07½	.07½
November	.08	.08	.07½	.07½
December	.08	.08	.07½	.07½
Year	.08	.03	.09½	.07½

Arsenic, Red

October 18, 1871, the price was 5½c. per pound; 1881, 5¾c.; 1891, 5c.; 1901, 7c.; 1911, 6¼c.; 1913, 5¾c.; 1916, December, 70c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.10½	$0.10½	$0.09	$0.09
February	.10½	.09¾	.09	.09
March	.09¾	.09¼	.09	.09
April	.09¼	.09¼	.09½	.09
May	.09¼	.09¼	.09½	.09½
June	.09¾	.09¼	.09½	.09½
July	.09¼	.09¼	.09¼	.09½
August	.09¾	.09	.09½	.09½
September	.09¾	.09¼	.09½	.09½
October	.09¼	.09	.09½	.09
November	.09	.09	.09	.09
December	.09	.09	.09	.09
Year	.10½	.09	.09½	.09

Bleaching Powder

October 18, 1871, the price was $3.50 per 100 pounds; 1881, $1.07; 1891, $2.25; 1901, $1.75; 1911, $1.50; 1913, $1.25; 1916, January, $14.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.00	$2.00	$2.00	$2.00
February	2.00	2.00	2.00	2.00
March	2.00	2.00	2.00	2.00
April	2.00	2.00	2.00	2.00
May	2.00	2.00	2.00	2.00
June	2.00	2.00	2.00	2.00
July	2.00	2.00	2.00	2.00
August	2.00	2.00	2.00	2.00
September	2.00	2.00	2.00	2.00
October	2.00	2.00	2.00	2.00
November	2.00	2.00	2.00	2.00
December	2.00	2.00	2.00	2.00
Year	2.00	2.00	2.00	2.00

Brimstone

October 18, 1871, the price was $33.50 per ton; 1881, $31 to $32; 1891, $29 to $30; 1901, $24 to $28; 1911, $22 to $22.50; 1913, $22; 1917, February, $45.

(Price at Mines)

	per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$18.00	$18.00	$18.00	$18.00
February	18.00	18.00	18.00	18.00
March	18.00	18.00	18.00	18.00
April	18.00	18.00	18.00	18.00
May	18.00	18.00	18.00	18.00
June	18.00	18.00	18.00	18.00
July	18.00	18.00	18.00	18.00
August	18.00	18.00	18.00	18.00
September	18.00	18.00	18.00	18.00
October	18.00	18.00	18.00	18.00
November	18.00	18.00	18.00	18.00
December	18.00	18.00	18.00	18.00
Year	18.00	18.00	18.00	18.00

Arsenic, White

October 18, 1871, the price was 1⅞c. per pound; 1881, 2¾c. to 3½c.; 1891, 2⅞c. to 3c.; 1901, 3¾c. to 3⅞c.; 1911, 2¼c. to 2⅜c.; 1913, 3½c.; 1917, May, 20c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.03½	$0.03½	$0.04	$0.04
February	.03¾	.03½	.04	.04
March	.03¾	.03¼	.04	.04
April	.03¾	.03¾	.04	.04
May	.03¾	.03¾	.04	.04
June	.03¾	.03¾	.04	.04
July	.03¾	.03¾	.04	.04
August	.03¾	.03¾	.04	.04
September	.04	.04	.04	.04
October	.04	.04	.04	.04
November	.04	.04	.04	.04
December	.04	.04	.04	.04
Year	.04	.03¼	.04	.04

Twenty-two Years' Prices

	H.	L.
1907	$0.08¼	$0.05¾
1908	.06	.03
1909	.03¼	.02⅝
1910	.03¼	.02¼
1911	.02⅝	.01½
1912	.05½	.02⅝
1913	.05	.03
1914	.05	.02⅝
1915	.04½	.03½
1916	.08¼	.03⅞
1917	.20	.08
1918	.17½	.09
1919	.12	.08
1920	.16¼	.10½
1921	.10¼	.05½
1922	.15½	.05½
1923	.16	.09¾
1924	.13½	.06
1925	.06¼	.03½
1926	.03½	.03½
1927	.04	.03¾
1928	.04	.04

Barium, Chloride

August 20, 1906, the price was $33.50 per ton; October 18, 1911, $31.50; 1913, $33; 1916, February, $140.

	per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$61.00	$61.00	$48.00	$48.00
February	61.00	61.00	56.00	55.00
March	61.00	58.00	55.00	54.00
April	58.00	58.00	55.00	54.00
May	58.00	58.00	55.00	55.00
June	58.00	58.00	56.00	55.00
July	58.00	58.00	60.00	57.00
August	60.00	58.00	60.00	57.00
September	59.50	59.00	61.00	60.00
October	60.00	57.50	63.00	63.00
November	60.00	56.00	63.00	63.00
December	56.00	50.00	63.00	63.00
Year	61.00	50.00	63.00	48.00

Calcium Arsenate

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.07½	$0.07½	$0.06½	$0.06½
February	.07½	.07½	.06½	.06½
March	.07½	.07½	.06½	.06½
April	.07½	.07½	.06½	.06½
May	.07½	.07½	.06½	.06½
June	.07½	.07½	.06½	.06½
July	.07½	.07½	.06	.06
August	.07½	.07½	.06	.06
September	.07½	.07	.06	.06
October	.07	.06½	.07	.06
November	.06½	.06½	.07	.07
December	.06½	.06½	.07	.07
Year	.07½	.06½	.07	.06

Calcium Carbide

In 1900, when first introduced on a large scale, the price was $5.50 per 100 pounds; 1918, July, $16.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$5.00	$5.00	$5.00	$5.00
February	5.00	5.00	5.00	5.00
March	5.00	5.00	5.00	5.00
April	5.00	5.00	5.00	5.00
May	5.00	5.00	5.00	5.00
June	5.00	5.00	5.00	5.00
July	5.00	5.00	5.00	5.00
August	5.00	5.00	5.00	5.00
September	5.00	5.00	5.00	5.00
October	5.00	5.00	5.00	5.00
November	5.00	5.00	5.00	5.00
December	5.00	5.00	5.00	5.00
Year	5.00	5.00	5.00	5.00

Carbon Tetrachloride

In January, 1911, the price was 7½c. per pound; October 18, 1913, 7¾c.; 1918, October, 45c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.06¾	$0.06¾	$0.06¾	$0.06¾
February	.06¾	.06¾	.06¾	.06¾
March	.06¾	.06¾	.06¾	.06¾
April	.06¾	.06¾	.06¾	.06¼
May	.06¾	.06¾	.06¼	.06¼
June	.06¾	.06¾	.06¼	.06¼
July	.06¾	.06¾	.06¼	.06¼
August	.06¾	.06¾	.06¼	.06¼
September	.06¾	.06¾	.06¼	.06¼
October	.06¾	.06¾	.06¼	.06¼
November	.06¾	.06¾	.06¼	.06¼
December	.06¾	.06¾	.06¼	.06¼
Year	.06¾	.06¾	.06¾	.06¼

Chlorine, Liquid

In 1907, when it was first introduced, the price was 25c. per pound; October 18, 1911, 15c.; 1918, June, 22c.

(In tanks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.04	$0.04	$0.03¾	$0.03¾
February	.04	.04	.03¾	.03¾
March	.04	.04	.03¾	.03¾
April	.04	.04	.03¾	.03¾
May	.04	.04	.03¾	.03¾
June	.04	.04	.03¾	.03¾
July	.04	.04	.03¾	.03¾
August	.04	.04	.03½	.03½
September	.04	.04	.03½	.03½
October	.04	.04	.03½	.03
November	.04	.04	.03	.03
December	.04¼	.04	.03	.03
Year	.04¼	.04	.03¾	.03

Blue Vitriol, 99 Percent
(Copper Sulphate)

October 18, 1871, the price was $10.50 per 100 pounds; 1881, $6.50 to $7; 1891, $3.50 to 3.75; 1901, $4.75 to $4.90; 1911, $4.50 to $4.75; 1913, $5; 1916, January, $23.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$4.80	$4.80	$5.05	$5.05
February	4.80	4.80	5.05	5.05
March	4.80	4.80	5.05	5.05
April	4.90	4.80	5.15	5.05
May	4.90	4.90	5.30	5.15
June	4.90	4.90	5.30	5.30
July	4.90	4.90	5.30	5.30
August	5.00	5.00	5.30	5.30
September	5.00	5.00	5.30	5.30
October	5.00	5.00	5.30	5.30
November	5.00	5.00	5.50	5.30
December	5.00	5.00	5.50	5.50
Year	5.00	4.80	5.50	5.05

Copperas
(Iron Sulphate)

October 18, 1871, the price was $8.50 per 100 pounds: 1881, 60c.; 1891, 80c.; 1901, 30c.; 1911, 60c.; 1913, 70c.; 1918, December, $2.50.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$13.00	$13.00	$13.00	$13.00
February	13.00	13.00	13.00	13.00
March	13.00	13.00	13.00	13.00
April	13.00	13.00	13.00	13.00
May	13.00	13.00	13.00	13.00
June	13.00	13.00	13.00	13.00
July	13.00	13.00	13.00	13.00
August	13.00	13.00	13.00	13.00
September	13.00	13.00	13.00	13.00
October	13.00	13.00	13.00	13.00
November	13.00	13.00	13.00	13.00
December	13.00	13.00	13.00	13.00
Year	13.00	13.00	13.00	13.00

Ethyl Acetate, Technical

(In tanks)

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.72	$0.72	$0.85	$0.85
February	.72	.72	.85	.85
March	.72	.72	.80	.80
April	.72	.72	.80	.80
May	.85	.72	.80	.80
June	.85	.85	.82	.82
July	.85	.85	.82	.82
August	.85	.85	.87	.82
September	.85	.85	.87	.87
October	.85	.85	.87	.87
November	.85	.85	1.00	.92
December	.85	.85	1.00	1.00
Year	.85	.72	1.00	.80

Fluorspar, Washed Gravel, 85 Percent

December 16, 1918, the price was $90 per ton.

	Per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$22.00	$22.00	$22.00	$22.00
February	22.00	22.00	22.00	22.00
March	22.00	22.00	22.00	22.00
April	22.00	22.00	22.00	22.00
May	22.00	22.00	22.00	22.00
June	22.00	22.00	22.00	22.00
July	22.00	22.00	17.00	17.00
August	22.00	22.00	17.00	17.00
September	22.00	22.00	17.00	17.00
October	22.00	22.00	17.00	17.00
November	22.00	22.00	18.00	17.00
December	22.00	22.00	18.00	18.00
Year	22.00	22.00	22.00	17.00

Glauber's Salt

October 18, 1871, the price was $2.10 per 100 pounds; 1881, $1.10; 1891, $1.15; 1901, 90c.; 1911, 75c.; 1913, 60c.; 1918, July, $3.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.85	$0.85	$0.70	$0.70
February	.85	.80	.70	.70
March	.80	.80	.70	.70
April	.80	.80	.70	.70
May	.80	.75	.70	.70
June	.75	.70	.70	.70
July	.70	.70	.70	.70
August	.70	.70	.70	.70
September	.70	.70	.70	.70
October	.70	.70	.70	.70
November	.70	.70	.70	.70
December	.70	.70	.70	.70
Year	.85	.70	.70	.70

Lead, Acetate, Brown, Broken

October 18, 1871, the price was 10¾c. per pound; 1881, 8½c.; 1891, 6¼c.; 1901, 6c.; 1911, 7¾c.; 1913, 7¾c.; 1918, March, 17c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.13	$0.13	$0.12	$0.12
February	.13	.13	.12	.12
March	.13	.13	.12	.12
April	.13	.13	.12	.12
May	.13	.13	.12	.12
June	.12	.12	.12	.12
July	.12	.12	.12	.12
August	.12	.12	.12	.12
September	.12	.12	.12	.12
October	.12	.12	.12	.12
November	.12	.12	.12	.12
December	.12	.12	.12	.12
Year	.13	.12	.12	.12

Lime, Acetate

In 1871 the price was $6.35 per 100 pounds; 1881, $3.60; 1891, $1.90; 1901, $1.55; 1913, $2; 1916, January, $7.05.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$3.50	$3.50	$3.50	$3.50
February	3.50	3.50	3.50	3.50
March	3.50	3.50	3.50	3.50
April	3.50	3.50	3.50	3.50
May	3.50	3.50	3.50	3.50
June	3.50	3.50	3.50	3.50
July	3.50	3.50	3.50	3.50
August	3.50	3.50	4.00	3.50
September	3.50	3.50	4.00	4.00
October	3.50	3.50	4.00	4.00
November	3.50	3.50	4.50	4.50
December	3.50	3.50	4.50	4.50
Year	3.50	3.50	4.50	3.50

Twenty-four Years' Prices

	Per 100 pounds	
	H.	L.
1905	$2.35	$2.00
1906	2.40	2.35
1907	2.55	2.35
1908	2.30	1.50
1909	2.05	1.50
1910	2.05	2.00
1911	2.05	1.75
1912	2.55	2.25
1913	2.55	2.00
1914	2.05	1.50
1915	6.10	2.00
1916	7.05	3.50
1917	6.05	3.50
1918	6.05	3.00
1919	3.05	2.00
1920	3.50	2.00
1921	2.00	1.50
1922	3.50	1.75
1923	4.00	3.50
1924	4.00	3.00
1925	3.25	2.75
1926	3.50	3.25
1927	3.50	3.50
1928	4.50	3.50

Nickel Salt, Single

September 11, 1891, the price was 15c. per pound; October 18, 1901, 10½c.; 1911, 13c.; 1913, 12c.; 1918, September, 17c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.10½	$0.10½	$0.10½	$0.10½
February	.10½	.10½	.10½	.10½
March	.10½	.10½	.10½	.10½
April	.10½	.10½	.10½	.10½
May	.10½	.10½	.10½	.10½
June	.10½	.10½	.10½	.10½
July	.10½	.10½	.10½	.10½
August	.10½	.10½	.10½	.10½
September	.10½	.10½	.10½	.10½
October	.10½	.10½	.10½	.10½
November	.10½	.10½	.10½	.10½
December	.10½	.10½	.13	.10½
Year	.10½	.10½	.13	.10½

Phosphorus, Red

October 18, 1871, the price was $1.15 per pound; 1881, 58c.; 1891, 65c.; 1901, 60c.; 1911, 50c.; 1913, 50c.; 1918, January, $1.70.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.65	$0.65	$0.60	$0.60
February	.65	.65	.60	.60
March	.65	.65	.60	.60
April	.65	.65	.60	.60
May	.65	.65	.60	.60
June	.65	.60	.60	.60
July	.60	.60	.55	.55
August	.60	.60	.55	.55
September	.65	.60	.55	.55
October	.60	.60	.55	.55
November	.60	.60	.55	.55
December	.60	.60	.55	.55
Year	.65	.60	.60	.55

Phosphorus, Yellow

October 18, 1871, the price was $1.10 per pound; 1881, 55c.; 1891, 60c.; 1901, 45c.; 1911, 45c.; 1913, 45c.; 1918, January, $2.10.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.32	$0.32	$0.32	$0.32
February	.32	.32	.32	.32
March	.32	.32	.32	.32
April	.32	.32	.32	.32
May	.32	.32	.32	.32
June	.32	.32	.32	.32
July	.32	.32	.35	.35
August	.32	.32	.35	.35
September	.32	.32	.35	.35
October	.32	.32	.35	.35
November	.32	.32	.35	.35
December	.32	.32	.35	.35
Year	.32	.32	.35	.32

Potash, Carbonate, Calcined, 80 to 85 Percent

October 18, 1871, the price was 15c. per pound; 1881, 6½c.; 1891, 5c.; 1901, 4½c.; 1911, 3½c.; 1913, 3¾c.; 1917, November, 70c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.05½	$0.05¼	$0.05¾	$0.05¾
February	.05½	.05½	.05¾	.05¾
March	.05½	.05½	.05¾	.05¾
April	.05¾	.05½	.05¾	.05¾
May	.05¾	.05¾	.05¾	.05¾
June	.05¾	.05¾	.05¾	.05¾
July	.05¾	.05¾	.05¾	.05¾
August	.05¾	.05¾	.05¾	.05¾
September	.05¾	.0515	.05¾	.05¾
October	.05¾	.05¾	.05¾	.05¾
November	.05¾	.05¾	.05¾	.05¾
December	.05¾	.05¾	.05¾	.05¾
Year	.05¾	.0515	.05¾	.05¾

Potash, Caustic, 88 to 92 Percent

October 18, 1871, the price was 7¼c. per pound; 1881, 6c.; 1891, 6¾c.; 1901, 6c.; 1911, 3¾c.; 1913, 4c.; 1916, February, $1.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.07⅛	$0.07⅛	$0.07⅛	$0.07⅛
February	.07⅛	.07⅛	.07⅛	.07⅛
March	.07⅛	.07⅛	.07⅛	.07⅛
April	.07⅛	.07⅛	.07⅛	.07⅛
May	.07⅛	.07⅛	.07⅛	.07⅛
June	.07⅛	.07⅛	.07⅛	.07⅛
July	.07⅛	.07⅛	.07⅛	.07⅛
August	.07⅛	.07⅛	.07⅛	.07⅛
September	.07⅛	.07⅛	.07⅛	.07⅛
October	.07⅛	.07⅛	.07⅛	.07⅛
November	.07⅛	.07⅛	.07⅛	.07⅛
December	.07⅛	.07⅛	.07⅛	.07⅛
Year	.07⅛	.07⅛	.07⅛	.07⅛

Potash, Chlorate

October 18, 1871, the price was 55c. per pound; 1881, 15¾c.; 1891, 10¾c.; 1901, 8¼c.; 1911, 8¼c.; 1913, 8¾c.; 1916, March, 75c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.08	$0.08	$0.07¾	$0.07½
February	.08	.08	.07¾	.07¾
March	.08	.08	.07¾	.07½
April	.08	.08	.07½	.07½
May	.08	.08	.07½	.07½
June	.09	.08	.08	.07½
July	.08	.08	.08	.08¼
August	.08	.07½	.07½	.07¾
September	.07½	.07½	.07½	.08¼
October	.07½	.07½	.07½	.08¼
November	.07½	.07½	.07½	.08¼
December	.07½	.07½	.07½	.07½
Year	.08	.07½	.08	.08¼

Potash, Permanganate, Technical

In 1901 the price was 9c. to 11c.; October 18, 1911, 8¾c.; 1918, 9½c.; 1918, September, $2.25.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.14	$0.14	$0.15	$0.15
February	.14	.14	.15	.15
March	.14	.13½	.15	.15
April	.13½	.13½	.15	.15
May	.14	.13½	.15	.14½
June	.14	.14	.14½	.14½
July	.14	.14	.15	.15
August	.14½	.14	.15	.15
September	.14	.14	.15	.15
October	.15	.15	.15	.15
November	.15	.15	.15	.15
December	.15	.15	.16	.15
Year	.15	.13½	.16	.14½

Salt Cake, Ground

In October, 1881, the price was $18 per ton; October 18, 1891, $15; 1901, $15; 1911, $12; 1913, $11.50; 1920, August, $80.

(In barrels)

	Per ton— 1927. H.	L.	1928. H.	L.
January	$21.00	$21.00	$21.00	$21.00
February	21.00	21.00	21.00	21.00
March	21.00	21.00	21.00	21.00
April	21.00	21.00	21.00	21.00
May	21.00	21.00	21.00	21.00
June	21.00	21.00	21.00	21.00
July	21.00	21.00	21.00	21.00
August	21.00	21.00	21.00	21.00
September	21.00	21.00	21.00	21.00
October	21.00	21.00	21.00	21.00
November	21.00	21.00	21.00	21.00
December	21.00	21.00	21.00	21.00
Year	21.00	21.00	21.00	21.00

Saltpeter, Crystals

September 16, 1879, the price was 6c. per pound; October 18, 1881, 7c.; 1891, 6¾c.; 1901, 4¼c.; 1911, 4¾c.; 1913, 6¼c.; 1916, January, 38c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.07¼	$0.07¼	$0.07¼	$0.07¼
February	.07¼	.07¼	.07¼	.07¼
March	.07¼	.07¼	.07¼	.07¼
April	.07¼	.07¼	.07¼	.07½
May	.07¼	.07¼	.07¼	.07¼
June	.07¼	.07¼	.07¼	.07¼
July	.07¼	.07¼	.07¼	.07¼
August	.07¼	.07¼	.07¼	.07¼
September	.07¼	.07¼	.07¼	.07¼
October	.07¼	.07¼	.07¼	.07¼
November	.07¼	.07¼	.07¼	.07¼
December	.07¼	.07¼	.07¼	.07¼
Year	.07¼	.07¼	.07¼	.07¼

Soda Ash, Light, 58 Percent

October 18, 1871, the price was $2.70 per 100 pounds; 1881, $1.50; 1891, $1.60; 1901, 85c.; 1911, 80c.; 1913, 85c.; 1916, February, $4.50.

(In bags)

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$1.32½	$1.32½	$1.32	$1.32
February	1.32½	1.32½	1.32	1.32
March	1.32½	1.32½	1.32	1.32
April	1.32½	1.32½	1.32	1.32
May	1.32½	1.32½	1.32	1.32
June	1.32½	1.32½	1.32	1.32
July	1.32½	1.32½	1.32	1.32
August	1.32½	1.32½	1.32	1.32
September	1.32½	1.32½	1.32	1.32
October	1.32½	1.32½	1.32	1.32
November	1.32½	1.32½	1.32	1.32
December	1.32¼	1.32½	1.32	1.32
Year	1.32½	1.32½	1.32	1.32

Soda, Bicarbonate

October 18, 1871, the price was $4.50 per 100 pounds; 1881, $3.70; 1891, $3.25; 1901, 95c.; 1911, $2.75; 1913, $1; 1918, October, $4.50.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$1.90	$1.90	$1.90	$1.90
February	1.90	1.90	1.90	1.90
March	1.90	1.90	1.90	1.90
April	1.90	1.90	1.90	1.90
May	1.90	1.90	1.90	1.90
June	1.90	1.90	2.00	1.90
July	1.90	1.90	2.00	2.00
August	1.90	1.90	2.00	2.00
September	1.90	1.90	2.00	2.00
October	1.90	1.90	2.00	2.00
November	1.90	1.90	2.00	2.00
December	1.90	1.90	2.00	2.00
Year	1.90	1.90	2.00	1.90

Soda, Caustic, 76 Percent Solid

October 18, 1871, the price was $4.88 per 100 pounds; 1881, $3.75; 1891, $1.55; 1901, $1.95; 1911, $1.80; 1913, $1.75; 1917, September, $10.70.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$3.00	$3.00	$2.90	$2.90
February	3.00	3.00	2.90	2.90
March	3.00	3.00	2.90	2.90
April	3.00	3.00	2.90	2.90
May	3.00	3.00	2.90	2.90
June	3.00	3.00	2.90	2.90
July	3.00	3.00	2.90	2.90
August	3.00	3.00	2.90	2.90
September	3.00	3.00	2.90	2.90
October	3.00	3.00	2.90	2.90
November	3.00	3.00	2.90	2.90
December	3.00	3.00	2.90	2.90
Year	3.00	3.00	2.90	2.90

Soda, Chlorate

October 18, 1871, the price was 40c. per pound; 1881, 15½c.; 1891, 10½c.; 1901, 7¾c.; 1911, 8c.; 1913, 8¼c.; 1916, February, 35c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.06¼	$0.06¼	$0.06½	$0.06½
February	.06¼	.06¼	.06½	.06½
March	.06½	.06¼	.06½	.05¾
April	.06½	.06½	.05¾	.05¾
May	.06½	.06½	.05¾	.05¾
June	.06½	.06½	.05¾	.05¾
July	.06½	.06½	.05¾	.05¾
August	.06½	.06½	.05¾	.05¾
September	.06½	.06½	.05¾	.05¾
October	.06½	.06½	.05¾	.05¾
November	.06½	.06½	.05¾	.05¾
December	.06½	.06½	.06½	.05¾
Year	.06½	.06¼	.06½	.05¾

Soda, Cyanide

October 18, 1913, the price was 25c.; 1917, January, $2.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.18	$0.18	$0.17	$0.17
February	.18	.18	.17	.17
March	.18	.18	.17	.17
April	.18	.18	.17	.17
May	.18	.18	.17	.17
June	.18	.18	.17	.17
July	.18	.18	.17	.17
August	.18	.18	.17	.17
September	.18	.18	.17	.17
October	.18	.18	.17	.17
November	.18	.18	.17	.17
December	.19	.19	.17	.17
Year	.19	.18	.17	.17

Soda, Nitrite, 96 to 98 Percent

Not quoted prior to August, 1917, when price was 44c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.08½	$0.08½	$0.07¼	$0.07¼
February	.08½	.08	.07¼	.07¼
March	.08	.079	.07¼	.07¼
April	.079	.079	.07¼	.07¼
May	.0815	.0815	.07¼	.07¼
June	.0815	.0815	.07¼	.07¼
July	.0815	.0815	.07¼	.07¼
August	.0815	.0815	.07¼	.07¼
September	.0815	.0815	.07¼	.07¼
October	.0875	.0815	.07¼	.07¼
November	.0815	.07½	.07¼	.07¼
December	.07½	.07½	.07¼	.07¼
Year	.08½	.07½	.07¼	.07¼

Soda, Hyposulphite, Ordinary

October 18, 1871, the price was $9 per 100 pounds; 1881, $4.50; 1891, $2; 1901, $1.80; 1911, $1.30; 1913, $1.30; 1918, November, $4.10.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$2.40	$2.40	$2.40	$2.40
February	2.40	2.40	2.40	2.40
March	2.40	2.40	2.40	2.40
April	2.40	2.40	2.40	2.40
May	2.40	2.40	2.40	2.40
June	2.40	2.40	2.40	2.40
July	2.40	2.40	2.40	2.40
August	2.40	2.40	2.40	2.40
September	2.40	2.40	2.40	2.40
October	2.40	2.40	2.40	2.40
November	2.40	2.40	2.40	2.40
December	2.40	2.40	2.40	2.40
Year	2.40	2.40	2.40	2.40

Soda, Phosphate, Commercial

October 18, 1871, the price was 30c. per pound; 1881, 20c.; 1891, 22c.; 1901, 2½c.; 1911, 2¼c.; 1913, 2¾c.; 1918, January, 7c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.03¼	$0.03¼	$0.03¼	$0.03¼
February	.03¼	.03¼	.03¼	.03¼
March	.03¼	.03¼	.03¼	.03¼
April	.03¼	.03¼	.03¼	.03¼
May	.03¼	.03¼	.03¼	.03¼
June	.03¼	.03¼	.03¼	.03¼
July	.03¼	.03¼	.03¼	.03¼
August	.03¼	.03¼	.03¼	.03¼
September	.03¼	.03¼	.03¼	.03¼
October	.03¼	.03¼	.03¼	.03¼
November	.03¼	.03¼	.03¼	.03¼
December	.03¼	.03¼	.03¼	.03¼
Year	.03¼	.03¼	.03¼	.03¼

Soda, Sal

October 18, 1871, the price was $1 per 100 pounds; 1881, $1.10; 1891, $1.05; 1901, 60c.; 1911, 65c.; 1913, 60c.; 1918, November, $2.50.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$0.90	$0.90	$0.90	$0.90
February	.90	.90	.90	.90
March	.90	.90	.90	.90
April	.90	.90	.90	.90
May	.90	.90	.90	.90
June	.90	.90	1.00	.90
July	.90	.90	1.00	1.00
August	.90	.90	1.00	1.00
September	.90	.90	1.00	1.00
October	.90	.90	1.00	1.00
November	.90	.90	1.00	1.00
December	.90	.90	1.00	1.00
Year	.90	.90	1.00	.90

Soda, Silicate, 60 Degrees

January 14, 1901, the price was $2 per 100 pounds; October 18, 1911, $2; 1913, $2; 1918, October, $8.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$1.60	$1.60	$1.65	$1.65
February	1.60	1.60	1.65	1.65
March	1.60	1.60	1.65	1.65
April	1.60	1.60	1.65	1.65
May	1.60	1.60	1.65	1.65
June	1.60	1.60	1.65	1.65
July	1.60	1.60	1.65	1.65
August	1.60	1.60	1.65	1.65
September	1.60	1.60	1.65	1.65
October	1.65	1.65	1.65	1.65
November	1.65	1.65	1.65	1.65
December	1.65	1.65	1.65	1.65
Year	1.65	1.60	1.65	1.65

Soda, Silicate, 40 Degrees

January 14, 1901, the price was $1 per 100 pounds; October 18, 1911, 65c.; 1913, 60c.; 1918, October, $3.50.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$0.65	$0.65	$0.65	$0.65
February	.65	.65	.65	.65
March	.65	.65	.65	.65
April	.65	.65	.65	.65
May	.65	.60	.65	.65
June	.60	.60	.65	.65
July	.60	.60	.65	.65
August	.60	.60	.65	.65
September	.60	.60	.65	.65
October	.65	.65	.70	.70
November	.65	.65	.70	.70
December	.65	.65	.70	.70
Year	.65	.60	.70	.65

Soda, Sulphide, 60 Percent

September 21, 1911, the price was $2.50 per 100 pounds; 1913, $2.50; 1918, November, $12.

	Per hundred weight— 1927. H.	L.	1928. H.	L.
January	$3.75	$3.75	$3.75	$3.75
February	3.75	3.75	3.75	3.75
March	3.75	3.75	3.75	3.75
April	3.75	3.75	3.75	3.75
May	3.75	3.75	3.50	3.50
June	3.75	3.75	3.50	3.50
July	3.75	3.75	3.25	3.25
August	3.75	3.75	3.25	3.25
September	3.75	3.75	3.25	3.25
October	3.75	3.75	3.50	3.50
November	3.75	3.75	3.50	3.25
December	3.75	3.75	3.25	3.25
Year	3.75	3.75	3.75	3.25

Soda, Sulphide, 30 Percent

September 21, 1911, the price was $1.50 per 100 pounds; 1913, $1.50; 1918, October, $7.

	Per hundred weight— 1927. H.	L.	1928. H.	L.
January	$2.25	$2.25	$2.35	$2.35
February	2.25	2.25	2.35	2.35
March	2.25	2.25	2.35	2.35
April	2.25	2.25	2.35	2.35
May	2.25	2.25	2.10	2.10
June	2.25	2.25	2.10	2.10
July	2.25	2.25	2.10	2.10
August	2.25	2.25	2.10	2.10
September	2.25	2.25	2.10	2.10
October	2.35	2.25	2.10	2.10
November	2.35	2.35	2.25	2.10
December	2.35	2.35	2.25	2.25
Year	2.35	2.25	2.35	2.10

Soda, Sulphite, Crystals

October 18, 1871, the price was 29c. per pound; 1891, 20c.; 1901, 5¼c.; 1911, 2¾c.; 1916, January, 6c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.02¾	$0.02¾	$0.03	$0.03
February	.02¾	.02¾	.03	.03
March	.02¾	.02¾	.03	.03
April	.02¾	.02¾	.03	.03
May	.02¾	.02¾	.03	.03
June	.02¾	.02¾	.03	.03
July	.02¾	.02¾	.03	.03
August	.02¾	.02¾	.03	.03
September	.02¾	.02¾	.03	.03
October	.03	.02¾	.03	.03
November	.03	.03	.03	.03
December	.03	.03	.03	.03
Year	.03	.02¾	.03	.03

Sulphur, Flour, Commercial

October 18, 1871, the price was $3.25 per 100 pounds; 1881, $2.80; 1891, $3.10; 1901, $1.70; 1911, $2; 1913, $2; 1918, January, $3.75.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$1.45	$1.45	$1.55	$1.55
February	1.45	1.45	1.55	1.55
March	1.45	1.45	1.55	1.55
April	1.45	1.45	1.55	1.55
May	1.45	1.45	1.55	1.55
June	1.45	1.45	1.55	1.55
July	1.45	1.45	1.55	1.55
August	1.45	1.45	1.55	1.55
September	1.45	1.45	1.55	1.55
October	1.45	1.45	1.55	1.55
November	1.45	1.45	1.55	1.55
December	1.55	1.45	1.55	1.55
Year	1.55	1.45	1.55	1.55

Tin, Bichloride

In 1871 the price was 45c. per pound; October 18, 1881, 36½c.; 1891, 24¾c.; 1901, 11¾c.; 1911, 11½c.; 1913, 12½c.; 1918, April, 29c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.19¾	$0.19¼	$0.17¾	$0.16½
February	.20	.19¼	.16¼	.15¾
March	.20¼	.19¾	.15¾	.15½
April	.19¾	.19½	.16	.15¾
May	.19½	.19½	.15½	.15½
June	.19½	.19	.15¼	.14½
July	.19	.19	.14¾	.14½
August	.19	.18½	.14¾	.14½
September	.19	.19	.15	.14½
October	.17¾	.17¾	.15¼	.15
November	.17½	.17¼	.15¾	.15½
December	.17¾	.17¾	.16¼	.15½
Year	.20¼	.17¼	.17¾	.14½

Tin Oxide

January 28, 1901, the price was 47c. per pound; October 18, 1911, 43c.; 1913, 44c.; 1918, May, $1.10.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.72	$0.70	$0.62	$0.60
February	.70	.68	.60	.58
March	.70	.70	.57	.56
April	.70	.70	.56	.56
May	.70	.69	.56	.56
June	.69	.68	.56	.55
July	.68	.68	.53	.53
August	.68	.67	.53	.53
September	.67	.67	.53	.53
October	.64	.64	.54	.53
November	.62	.62	.54	.54
December	.62	.62	.56	.54
Year	.72	.62	.62	.53

Zinc Carbonate

October 18, 1871, the price was 29c. per pound; 1881, 24c.; 1891, 27c.; 1901, 19c.; 1911, 7¼c.; 1913, 9c.; 1918, January, 20c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.10½	$0.10	$0.10	$0.10
February	.10	.10	.10	.10
March	.10	.10	.10	.10
April	.10	.10	.10	.10
May	.10	.10	.10	.10
June	.10	.10	.10	.10
July	.10	.10	.10	.10
August	.10	.10	.10	.10
September	.10	.10	.10	.10
October	.10	.10	.10½	.10
November	.10	.10	.10½	.10¼
December	.10	.10	.10½	.10¼
Year	.10½	.10	.10½	.10

Zinc Chloride, Fused

October 18, 1871, the price was 10c. per pound; 1881, 10½c.; 1891, 8¾c.; 1901, 6½c.; 1911, 4¼c.; 1913, 4½c.; 1917, May, 17c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.05¼	$0.05¼	$0.05¼	$0.05¼
February	.05¼	.05¼	.05¼	.05¼
March	.05¼	.05¼	.05¼	.05¼
April	.05¼	.05¼	.05¼	.05¼
May	.05¼	.05¼	.05¼	.05¼
June	.05¼	.05¼	.05¼	.05¼
July	.05¼	.05¼	.05¼	.05¼
August	.05¼	.05¼	.05¼	.05¼
September	.05¼	.05¼	.05¼	.05¼
October	.05¼	.05¼	.05¼	.05¼
November	.05¼	.05¼	.05¼	.05¼
December	.05¼	.05¼	.05¼	.05¼
Year	.05¼	.05¼	.05¼	.05¼

Acids: Record of Prices

Acetic, 28 Percent

October 18, 1871, the price was $1 per 100 pounds; 1881, $3.50; 1891, $1.50; 1901, $1.62; 1911, $1.60; 1913, $1.75; 1918, June, $12.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$3.37½	$3.37½	$3.37½	$3.37½
February	3.37½	3.37½	3.37½	3.37½
March	3.37½	3.37½	3.37½	3.37½
April	3.37½	3.37½	3.37½	3.37½
May	3.37½	3.37½	3.37½	3.37½
June	3.37½	3.37½	3.37½	3.37½
July	3.37½	3.37½	3.63	3.37½
August	3.37½	3.37½	3.63	3.63
September	3.37½	3.37½	3.63	3.63
October	3.37½	3.37½	3.88	3.88
November	3.37½	3.37½	3.88	3.88
December	3.37½	3.37½	3.88	3.88
Year	3.37½	3.37½	3.88	3.37½

Acetic, Glacial, 99 Percent

October 18, 1871, the price was $1.15 per 100 pounds; 1881, $8; 1891, $5.50; 1901, $4; 1911, $8.50; 1913, $8; 1918, May, $42.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$11.90	$11.90	$11.90	$11.90
February	11.90	11.90	11.90	11.90
March	11.90	11.90	11.90	11.90
April	11.90	11.90	11.90	11.90
May	11.90	11.90	11.90	11.90
June	11.90	11.90	11.90	11.90
July	11.90	11.90	12.79	11.90
August	11.90	11.90	12.79	12.79
September	11.90	11.90	12.79	12.79
October	11.90	11.90	12.79	12.79
November	11.90	11.90	13.68	13.68
December	11.90	11.90	13.68	13.68
Year	11.90	11.90	13.68	11.90

Battery

October 18, 1871, the price was $2.25 per 100 pounds; 1881, $1.22; 1891, 85c.; 1901, $1.20; 1911, $1; 1913, $1; 1918, September, $9.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$1.25	$1.25	$1.60	$1.60
February	1.25	1.25	1.60	1.60
March	1.25	1.25	1.60	1.60
April	1.25	1.25	1.60	1.60
May	1.25	1.25	1.60	1.60
June	1.25	1.25	1.60	1.60
July	1.25	1.25	1.60	1.60
August	1.25	1.25	1.60	1.60
September	1.25	1.25	1.60	1.60
October	1.35	1.25	1.60	1.60
November	1.35	1.35	1.60	1.60
December	1.60	1.35	1.60	1.60
Year	1.60	1.25	1.60	1.60

Boric, Crystals

October 18, 1871, the price was 75c. per pound; 1881, 15c.; 1891, 13½c.; 1901, 10¾c.; 1911, 7c.; 1913, 7c.; 1919, December, 14½c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.08	$0.08	$0.08	$0.08
February	.08	.08	.08	.08
March	.08	.08	.08	.08
April	.08	.08	.08	.08
May	.08	.08	.08	.08
June	.08	.08	.08	.08
July	.08	.08	.06½	.06½
August	.08	.08	.06½	.06½
September	.08	.08	.06½	.06½
October	.08	.08	.06½	.06½
November	.08	.08	.06½	.06½
December	.08	.08	.06½	.06½
Year	.08	.08	.08	.06½

Citric, Crystals

October 18, 1871, the price was 80c. per pound; 1881, 63c.; 1891, 42c.; 1901, 36c.; 1911, 28½c.; 1913, 55c.; 1918, December, $1.25.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.44¼	$0.43½	$0.44½	$0.44½
February	.43½	.43½	.44½	.44½
March	.43½	.43½	.44¼	.44½
April	.43¾	.43½	.46	.44¾
May	.44½	.43½	.46	.46
June	.45½	.44½	.46	.46
July	.45½	.45½	.46	.46
August	.45¾	.45½	.46	.46
September	.45½	.45½	.46	.46
October	.44½	.44½	.46	.46
November	.44½	.44½	.46	.46
December	.44½	.44½	.46	.46
Year	.45½	.43½	.46	.44½

Formic

In 1911 the price was 11c.; October 18, 1913, 14c. to 14½c.; 1918, January, 36c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.10½	$0.10½	$0.11	$0.11
February	.10½	.10½	.11	.11
March	.10½	.10½	.11	.11
April	.10½	.10½	.11	.11
May	.10½	.10½	.11	.11
June	.10½	.10½	.11	.11
July	.10½	.10½	.11	.11
August	.11	.10½	.11	.11
September	.11	.11	.11	.11
October	.11	.11	.11	.11
November	.11	.11	.11	.11
December	.11	.11	.11	.11
Year	.11	.10½	.11	.11

Muriatic, 22 Degrees

October 18, 1871, the price was $3 per 100 pounds; 1881, $1.80; 1891, $1.20; 1901, $1.50; 1911, $1.45; 1913, $1.45; 1916, June, $5.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$1.75	$1.75	$1.60	$1.60
February	1.75	1.75	1.60	1.60
March	1.75	1.75	1.60	1.60
April	1.75	1.50	1.60	1.60
May	1.50	1.50	1.60	1.60
June	1.50	1.50	1.60	1.60
July	1.50	1.50	1.60	1.60
August	1.50	1.50	1.60	1.60
September	1.50	1.50	1.60	1.60
October	1.95	1.50	1.60	1.60
November	1.95	1.95	1.60	1.60
December	1.95	1.95	1.60	1.60
Year	1.95	1.50	1.60	1.60

Nitric, 42 Degrees

October 18, 1871, the price was $13 per 100 pounds; 1881, $8.25; 1891, $4.25; 1901, $4.50; 1911, $4.80; 1913, $4.50; 1917, October, $10.70.

	Per 100 pounds— 1927. H.	L.	1928. H.	L.
January	$6.50	$6.50	$6.50	$6.50
February	6.50	6.50	6.50	6.50
March	6.50	6.50	6.50	6.50
April	6.50	6.50	6.50	6.50
May	6.50	6.50	6.50	6.50
June	6.50	6.50	6.50	6.50
July	6.50	6.50	6.50	6.50
August	6.50	6.50	6.50	6.50
September	6.50	6.50	6.50	6.50
October	6.50	6.50	6.50	6.50
November	6.50	6.50	6.50	6.50
December	6.50	6.50	6.50	6.50
Year	6.50	6.50	6.50	6.50

Oleum, 20 Percent

October 18, 1871, the price was $25 per ton; 1881, $15; 1891, $22; 1901, $36; 1911, $22; 1913, $25; 1918, November, $29.50.

	Per ton— 1927. H.	L.	1928. H.	L.
January	$17.50	$17.50	$18.50	$18.50
February	17.50	17.50	18.50	18.50
March	17.50	17.50	18.50	18.50
April	17.50	17.50	18.50	18.50
May	17.50	17.50	18.50	18.50
June	17.50	17.50	18.50	18.50
July	17.50	17.50	18.50	18.50
August	17.50	17.50	18.50	18.50
September	17.50	17.50	18.50	18.50
October	17.50	17.50	18.50	18.50
November	18.00	18.00	18.50	18.50
December	18.00	18.00	18.50	18.50
Year	18.00	17.50	18.50	18.50

Oxalic

October 18, 1871, the price was 25c. per pound; 1881, 9¾c.; 1891, 6¾c.; 1901, 5c.; 1911, 7½c.; 1913, 7½c.; 1916, March, 80c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.11¼	$0.10¾	$0.11	$0.11
February	.11¼	.11¼	.11	.11
March	.11	.11	.11	.11
April	.11	.11	.11	.11
May	.11	.11	.11	.11
June	.11	.11	.11	.11
July	.11	.11	.11	.11
August	.11	.11	.11	.11
September	.11	.11	.11	.11
October	.11	.11	.11	.11
November	.11	.11	.11	.11
December	.11	.11	.11	.11
Year	.11¼	.10¾	.11	.11

(Continued on page 69)

Coaltar Products: Market Review

By means of a still closer alignment between supply and demand producers of crude coaltar products, as well as a highly diversified list of coaltar acids and intermediates were able during the 1928 calendar year to bring about an even greater degree of stability in their products than they had achieved in the preceding year. The producers of crudes profited largely by the experiences of the three preceding years when over production had been responsible for so much weakness and unsettlement in the market, and 1928 started with a condition of general stability in most products. The numerous downward revisions which had been named in a formidable list of coaltar acids and intermediates in the closing days of 1927 had placed the market in a decidedly attractive position for contracting, and at the start of 1928 a majority of producers had booked their prospective production for many months ahead. In fact, the output of all of the principal intermediates had been spoken for so that producers by being able to gauge with fair accuracy the extent of the requisitions which were likely to be made on them were able to preserve a fair degree of stability in the markets practically throughout the year.

No one at the outset of 1928 harbored the slightest thought that the country's textile industry would go through so drastic a period of readjustment as later on proved to be the case. The textile industry as a whole had been established on perhaps as sound a basis as had ruled since the war, and the buying of colors had been stabilized to a point where dyers and finishers were able to estimate with a nice degree of accuracy just what their requirements over a given period of months would amount to. This situation had become so well defined in fact that manufacturers of coaltar colors, instead of facing the necessity of passing the advantages of the numerous price cuts in intermediates along to the consumer in the shape of lower prices for finished dyes, were in many instances demanding a better rate of remuneration. In fact, the general tightening of the market for colors early last year prompted not a few textile operators to go slow in the matter of contracting for their requirements for the following six months.

Textile Mills Face Shut Downs

Not many weeks elapsed in the early part of 1928 before difficulties started to beset a major portion of all the textile manufacturers in the New England field. The floods of the preceding fall period had slowed up operations appreciably and labor troubles started soon to intervene with the result that early in 1928 fine goods mills in the vicinity of New Bedford were only operating at perhaps 60 percent of capacity, while at Fall River, the great print cloth center, the mills had curtailed their operations until they were operating at not better than 35 to 40 percent of capacity. The immediate prospect for any betterment of conditions seemed to be rather remote early in January, for a large majority of the New England mills, faced by constantly increasing overhead, were finally forced to announce wage cuts in the amount of 10 percent. All this served to unsettle the market, promote competition and create price irregularity in the general run of coaltar dyes. Moreover, foreign competition was keener in not a few productions bringing producers to the point where they were offering varying qualities and strength.

Not until quite late in the spring had a majority of the textile mills gotten confidence enough in the market to warrant them in placing contracts for any appreciable quantities of dyes. By this time direct and surphur black dyes were showing a great deal of activity while a great many light shades were being taken in increasing quantities for the account of the silk and rayon industries. One feature was that direct colors, which had shown the greatest proportion of decline in the preceding fall, had shown the largest percentage of recovery since. Most of the slump which had previously been shown in blacks was in fact recovered. The difficulties besetting so many textile mills had not been overcome with the advent of the passage of the first half of the year. Besides there was a let-down in the volume of inquiry for sulphur colors, as automobile manufacturers had not yet gotten into the full stride of operations and had not yet started placing their orders for velour and other upholstery materials.

Color Production Gained

Despite the spotted condition of the textile industry as a whole which continued for the greater part of the year, the producers of coaltar dyes went ahead and turned out just as great a volume of production last year as they had in the record year of 1927, when upwards of 95,000,000 pounds were produced. This was about fifteen-fold the pre-war output and was only made possible because importations had at the same time been drastically curtailed so that they represented considerably less than 10 percent of the totals imported before the war. The labor difficulties at textile establishments in the east, which had played such havoc during the greater part of the year, were finally settled amicably in the first week of October, when there was a general reopening of the New Bedford mills which had been suspended for a twenty-five weeks' period in protest against a 10 percent wage reduction. The strike ended with the acceptance of a compromise under which wages were reduced to the extent of 5 percent, with manufacturers agreeing to give thirty days' notice against any future wage cuts. As a result, upwards of 27,000 operatives in 56 mills operated by 26 corporations operating 2,621,166 spindles and 50,667 looms were back at their normal operations. The strike had been a costly affair, however, involving a net pay roll loss of over $15,000,000. Strange to relate, the cessation of mill operations for so lengthy a period had no great influence on the position of the cloth markets because the piece goods market had been in a state of overproduction before the strike began.

Following the strike, however, the mills plunged into a mad scramble for business, in the course of which values for finished textile products fell further. Towards the middle of July attempts had been made to reopen a number of mills, and at the same time others were beginning to operate rather freely on colors for artificial leathers for automobile upholstery. Throughout the period that the staple cotton mills were on strike the principal silk mills in Passaic, New Jersey, were enjoying a wide outlet for their products. Throughout the summer and fall months mills at Paterson were operating on tin weighted dress goods fabrics for fall and winter wear. The attempt was to weight these fabrics up to 40 percent with tin, although many mills deemed 25 percent as the maximum which could be used and still permit the resultant fabrics to retain their tensile strength. Activity in hosiery and broad silk mills was quite pronounced towards the turn of the year, and practically all classes of dyes were in good demand, especially sulphur, direct acid, and vat. Increased production of rayon was exerting a stimulating influence upon the movement of dyes, at it was on a large number of chemicals which were utilized in the processing of artificial silks. As the year closed there were exceedingly optimistic reports from some of the textile establishments, both in New England as well as in the South, as to a constantly expanding volume of sales. Popular staple colors were being taken in increasing quantities, with the demand leaning towards acid, sulphur, chrome, basic, and direct colors, as well as towards browns and tans.

Benzol Output Stepped Up

The close relationship between selling prices for some of the more important basic coaltar crudes the like of benzene, toluene, solvent naphtha, xylene, etc., and the ruling contract levels for intermediates and coaltar dyes was one of the interesting phases of the market. It will be recalled that the fall of 1927 produced little in the way of activity in the iron and steel industry and that the production of pig iron had been running at comparatively low levels since the previous April. Increased operations were being conducted in pig iron and coke in the Pittsburgh and Chicago districts early last year, but as the percentages of furnaces with benzol recovery apparatus continued relatively low, it could not be ascertained that much of an improvement in the rate of benzol production had been seen during the early months of the year. Early last year benzol production was in fact reported to be running at not better than 40 to 50 percent of normal, although predictions were freely made that this rate would be substantially increased as the year wore on. Throughout the first quarter and well into the second quarter of the year, the producers of benzol did not experience any unusual call for their product. In fact, they faced a situation wherein ultimate consumers were not even withdrawing the quantities called for in their original contracts, so that as they did not maintain storage facilities at the ovens they were frequently compelled to dispose of their product in the outside markets and sometimes at slight discounts from the ruling contract levels. This state of affairs was aggravated early in February when the operations of the United Steel Corporation and those of the important independent steel producers were stepped up to something like 90 percent of capacity. There were corresponding gains in the production of pig iron early in 1928 in keeping with the rapid improvement which was showing itself in the rate of operations of the leading divisions of the automotive industry. The producers, had not as yet, however, felt the stimulus of the increased output, as, lacking the required recovery apparatus, the benzol output persisted at around 50 percent of normal.

All this time the outlets for benzol were steady and continuous. A demand developed from the artificial leather and textile industries as well as from other important industrial users which accounted for a considerable portion of the production as soon as it became available. In addition motor benzol demands came into the market during the spring season of 1928 which accounted for virtually every additional gallon of benzol which could be spared. Besides, the hot weather demand for benzol for industrial purposes reached larger totals than had been witnessed in a good many years past. All this contributed towards a gradual appreciation of values, and an advance of 1c. per gallon in tank wagon schedules to a basis of 22c. per gallon for 90 percent and pure grades was followed by another advance of 1c. per gallon in October which established the market at a minimum of 23c. per gallon, tanks, works, for similar qualities.

Foreign Benzol Buying Gains

Instead of checking the rate of buying, as had been predicted, the advance only served to further whet the appetite of consumers and the market was going along at an extremely lively rate during the Fall months. Foreign buying of benzol which had been along such formidable lines the year before when such enormous quantities were being taken by Germany and other Central European countries for the purpose of supplementing their home production did not figure very conspicuously during the early part of last year. In fact the total foreign shipments up to the end of the month of August were but 15,268,402 gallons, which was about 2,000,000 gallons behind the corresponding totals of the year before. Much of this was made up during the succeeding three months as total exports up to the end of November had reached the large totals of 19,155,150 gallons in contrast with 23,504,389 gallons in the corresponding period of the year before. The sustained rate of activity in the iron and steel industry during the Fall of the year when for the first time on record every available open hearth furnace in the Mahoning Valley was in full operation was typical of the rapid gains which were being shown in the rate of benzol production. Towards the close of the year the estimate was made that iron and steel production for 1928 would total in the vicinity of some 50,000,000 tons which was about 6 percent above the record totals of 1926. Not a few consumers were at a loss to understand why the record operations in the iron and steel industry were not reflected in any improvement in the rate of deliveries in benzol, but in this connection it was pointed out that usually months elapse before the benzol market actually reflects the ruling rate of activity in the iron and steel lines. Besides allowance was made in the closing days of the year for the fact that the bulk of the production of household sizes of coke had already been run off which naturally meant some lessening in the rate of benzol production.

While the actual statistics on benzol production were not available for 1928 at the time this review went to press, it was estimated in authoritative circles that the output had by a considerable margin exceeded that of the year before when about 22,000,000 gallons of commercial benzol were produced. In 1927 domestic production of coke was 50,925,000 tons of which close to 44,000,000 tons were obtained from by-product ovens. The story of the recovery of coke oven tar in the 1928 calendar year made perhaps a more interesting chapter. The total production was over 550,000,000 gallons, of which total about 80 percent was sold, and the balance used. Under the prevailing method of fractional distillation the value of the total production of commercial benzene was estimated in excess of $5,000,000, while the output of motor benzol was believed to have exceeded 100,000,000 gallons, with a value of about $16,000,000. Solvent naphtha, one of the lesser of the crude fractions, was produced in the amount of about 5,000,000 gallons with a market value of perhaps about $1,250,000.

Shortage Develops in Toluol

Appreciable as the increase in toluol production in 1927 over 1926 had been, the output standing at 12,496,000 gallons compared to 8,801,000 gallons, it was believed in 1928 that a still further increase had been brought about. The enormous expansion in the lacquer materials industry during 1928 made for a keen and widespread demand for toluol for the greater part of 1928. During the early part of 1928 consumers did not withdraw toluol as freely as might have been expected were they going to obey the letter of their contracts. Much of the same conditions, therefore, confronted the producers as were experienced with benzol, for as they did not maintain any storage facilities at the ovens, the producers were forced to dispose of the product in the most available markets. The result was that later on in the year when an insatiable demand from the automotive industry for all kinds of lacquer materials came into the market, the producers of toluol found consumers requiring two carloads where their contracts only called for one. This served to create a widespread shortage during the last few months of the year with the result that producers were finally forced to place an advance of 5c. into effect which established the market on the basis of 40c. per gallon tanks, works and 45c. drums, works. The shortage which began to develop during September forced the producers to limit the quantities they could deliver against contracts to any consumers. The September-October and November production had been sold ahead early in the Fall and some resale material was reported to have been disposed of to lacquer materials manufacturers at as high as 55c. per gallon in the outside market. The producers had been successful in disposing of the bulk of the 1929 production before the end of the 1928 calendar year, but the question of whether consumers would require maximum quotas under their contracts was a moot one, so that it could not be determined at that time whether or not there would be a continuing shortage in 1929. At last accounts the producers had been able to catch up with some back shipments as the rapid rate of production in the automobile industry had slowed up to some extent, resulting in a breathing spell. Not a few of the lacquer materials manufacturers who had been compelled to pay premiums for the product during the latter half of 1928 were quite well satisfied to pay the producers a moderate advance over the prices that had ruled during the early part of the year as the increased remuneration derived from the sale of the product afforded the producers an opportunity to go into it on a more extensive scale. Even at the higher levels, it was pointed out, the margin of profit available for the producer was not large since the yield of toluol from light oils was not more than 10 percent.

Xylene appeared to be going hand in hand with the toluene market. At least there had been a substantial improvement in the volume of sales of this coaltar fraction during the last three months of the year, during which period it was being substituted to a large extent for toluol. Just what the actual production of the product was during the year was purely guesswork, but it was believed that a substantial percentage of the light oil products other than benzol, toluol and solvent naphtha incorporated in an output of close to 3,000,000 gallons, represented xylene. In addition to the regular outlet for the product in the lacquer materials field it was reported that rather substantial quantities had been taken for the account of the photographic rotogravure, paint, varnish and leather industries. At the close of the year the market had shown a net decline of 5c. per gallon to 30c. per gallon for the commercial grades in tanks, 40c. in tanks for the 5 degree, 33c. in tanks for the 10 degree, and 50c. tanks for the nitration grades, drum quantities being in all instances 5c. per gallon more.

Naphthalene Output Oversold

One of the bright spots in the market for crude coaltar products in 1928 was the enlarged outlet for naphthalene. The crude product was in rather short supply during the first half of the year when the demand for the refined product was at its height and this created somewhat of a shortage at times. The domestic producers were naming 5½c. to 6c. per pound for the balls and 5c. to 5½c. per pound for the flake early in the year, while quoting the dyestuff grade at 4½c. to 5c. per pound in barrels. At the same time the crude grades had reached a basis of 2⅜c. to 2½c. per pound. The period between April and the end of August proved to be an exceptionally active one. There was an unusually large contract demand running in the course of which the producers became oversold so that goods for nearby shipment were beginning to command premiums. During the middle of the summer the situation was aggravated by heavy purchases of the crude for the account of the dyestuffs manufacturers who were just then beginning to get into the full stride of their operations for fall and winter. By the end of the season in July a premium of 1c. per pound was being paid by consumers for refined naph-

thalene. As September wore on all shortages disappeared. Later in the year the producers announced they were accepting business for delivery during the spring and summer of 1929 at unchanged prices. So comprehensively did new contract business come in that rumors were circulating around during the last half of the year that the producers might be forced to place some slight premium on the product early in 1929. It was estimated that the production of crude and refined naphthalene in 1929 was in the vicinity of 9,000,000 pounds.

Disinfecting Oils Active

A wide outlet was enjoyed for some of the coaltar crudes utilized for disinfecting, creosoting and wood preservation purposes during 1929. There was a huge and continuous outlet for creosote oil on the basis of 13c. to 14c. per gallon for grades 2 and 3 tanks, works and 15c. to 16c. per gallon for the grade I, per gallon tanks, works. The bulk of the product went into the creosoting of railroad ties and structural timber. In the case of cresylic acid the market had ruled steady for the greater part of the year on the basis of 70c. to 74c. per gallon in tanks for the 95 to 97 percent and 72c. to 74c. per gallon for the 97 to 99 percent pale, but in the closing days of the year surplus stocks of the dark grades came on the market and resulted in a decline to 58c. to 70c. per gallon, depending on quality and seller, whereas the pale grades were not in very large supply and could not be purchased much under a basis of 65c. to 78c. per gallon in drums, depending on seller and quantity. The bulk of the supply of creosote oil was obtained from foreign sources, importations during the first eleven months of 1928 having been 83,254,894 gallons in contrast with 86,868,102 gallons in the corresponding period of a year ago.

The position of phenol was a steady one for the greater part of 1928. Early in the year the producers were adhering to a range of 17c. to 20c. per pound for the U.S.P. product in drums, depending on quantities. Later in the year they changed their methods of quoting and were naming 13¼c. per pound in 250 pound drums, car lots, works, although when quoted f.o.b., this city, the goods took the usual premium of 1c. per pound, while for less than car lots the producer's prices were on a basis of 13½c. per pound in 290 pound drums, and 14c. for 250 pound drums f.o.b. producers' works, while when quoted f.o.b., this city, 1c. per pound more was added. Consumption in the pharmaceutical industry was about up to the averages of the past few years, although it was doubtful if the combined production of the principal producers exceeded the totals of 8,000,000 pounds seen the year before. Considerably more than 75 percent of the domestic requirement represented synthetic phenol. The early perfection of a method of manufacturing phenol from monochlorobenzene was expected would result in a further paring down of the costs of manufacture.

Acids and Intermediates

In addition to our own extensive production of coaltar acids and intermediates, fair quantities were imported during 1928. In the first eleven months of the year the importations of coaltar intermediates reached a total of 1,250,422 pounds, whereas in the year before these imports had been 1,677,327 pounds. The importations of coaltar acids showed a huge increase to 2,837,800 pounds, as against but 195,019 pounds the year before. Most of the domestic coaltar acids and intermediates had been well established in price during the early part of 1928 and there were few if any occasions for price revisions during the year. The result was that the only actual changes of any moment were a 3c. per pound concession in benzidin base to a basis of 67c. per pound, a 4c. decline in dimethylanilin to 27c. per pound, an advance of 1c. in nitrobenzene to 9½c. to 11c. per pound for prompt shipment, a 3c. decline in orthotoluidin to 27c., a 3c. advance in paranitroanilin to 55c., a 3c. decline in paratoluidin to 38c., and a 3c. decline in tolidin base to 86c. per pound. The production of benzoic acid amounting to something in excess of 200,000 pounds found a ready outlet in the trades. Picric acid met a widespread call from the manufacturers of yellow dyes. Anilin oil was fractionally lower in the case of tank car quantities at the end of the year. It was figured that production was in the neighborhood of 28,000,000 pounds. Despite record production of phthalic anhydride the product was oversold throughout the latter part of the year and an extremely firm market situation ruled. Declines of 5c. per pound which occurred in dinitrochlorobenzene to 13c. to 14c. per pound, 5½c. in thiocarbanilide to 23c. to 24c. per pound in drums, 5c. in paraphenylaminediamine to $1.15 and $1.20 per pound, 10c. in metanitroparatoluidin to $1.60 to $1.70 per pound, 1c. in paratoluidin to 38c. to 42c. per pound, as well as a 20c. advance in dianisidin to $3 per pound, carlots, contracts, and $3.10 per pound less car lots for prompt shipment were maintained to the end of the year.

Coaltar Products: Record of Prices

Basic Products

Benzene (Benzol), 90 Percent

In March, 1916, the price was 90c. per gallon.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.24	$0.24	$0.21	$0.21
February	.24	.23	.21	.21
March	.23	.23	.22	.21
April	.24	.24	.22	.22
May	.24	.24	.22	.22
June	.23	.23	.22	.22
July	.23	.23	.22	.22
August	.23	.23	.22	.22
September	.23	.23	.22	.22
October	.23	.23	.23	.22
November	.21	.21	.23	.23
December	.21	.21	.23	.23
Year	.24	.21	.23	.21

Cresol, U.S.P.

In January, 1917, the price was $1.50 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.17½	$0.17½	$0.17½	$0.17½
February	.17½	.17½	.17½	.17½
March	.17½	.17½	.17½	.17½
April	.17½	.17½	.14	.14
May	.17½	.17½	.14	.14
June	.17½	.17½	.14	.14
July	.17½	.17½	.14	.14
August	.17½	.17½	.14	.14
September	.17½	.17½	.14	.14
October	.17½	.17½	.14	.14
November	.17½	.17½	.14	.14
December	.17½	.17½	.14	.14
Year	.17½	.17½	.17½	.14

Naphtha, Solvent

In January, 1917, the price was 30c. per gallon.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.35	$0.35	$0.35	$0.35
February	.35	.35	.35	.35
March	.35	.35	.35	.30
April	.35	.35	.30	.30
May	.35	.35	.30	.30
June	.35	.35	.30	.30
July	.35	.35	.30	.30
August	.35	.35	.30	.30
September	.35	.35	.30	.30
October	.35	.35	.30	.30
November	.35	.35	.30	.30
December	.35	.35	.30	.30
Year	.35	.35	.35	.30

Naphthalene, Flake

In 1901 the price was 2¾c. per pound; October 18, 1911, 2½c.; 1913, 2¼c.; 1916, March, 16c. per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.04½	$0.04½	$0.05	$0.05
February	.04½	.04½	.05	.05
March	.04½	.04½	.05	.05
April	.04½	.04½	.05	.05
May	.04½	.04½	.05	.05
June	.04½	.04½	.05	.05
July	.04½	.04½	.05	.05
August	.04½	.04½	.05	.05
September	.04½	.04½	.05	.05
October	.05	.04½	.05	.05
November	.05	.05	.05	.04½
December	.05	.05	.04½	.04½
Year	.05	.04½	.05	.04½

Phenol, U.S.P.

July 10, 1875, the price was 55c. per pound; October 18, 1881, 40c.; 1891, 12c.; 1901, 23c.; 1911, 15c.; 1913, 8¼c.; 1918, February, 18c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.17	$0.17	$0.17	$0.17
February	.17	.17	.17	.17
March	.17	.17	.17	.17
April	.17	.17	.17	.17
May	.17	.16	.17	.15
June	.16	.16	.15	.15
July	.16	.16	.15	.15
*August	.18	.16	.13¾	.12¾
September	.17	.17	.13¾	.13¼
October	.17	.17	.13¾	.13¼
November	.17	.17	.13¾	.13¼
December	.18	.16	.17	.12¾
Year				

* Quotation was changed to f.o.b. works.

Tar Acid Oil, 25 Percent

In July, 1918, the price was 55c. per gallon.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.28	$0.28	$0.29	$0.29
February	.29	.28	.29	.29
March	.29	.29	.29	.29
April	.29	.29	.29	.29
May	.29	.29	.29	.29
June	.29	.29	.29	.29
July	.29	.29	.29	.29
August	.29	.29	.29	.29
September	.29	.29	.29	.29
October	.29	.29	.29	.29
November	.29	.29	.29	.29
December	.29	.28	.29	.29

Toluene

In February, 1918, the price was $6 per gallon.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.35	$0.35	$0.35	$0.35
February	.35	.35	.35	.35
March	.35	.35	.35	.35
April	.35	.35	.35	.35
May	.35	.35	.35	.35
June	.35	.35	.35	.35
July	.35	.35	.35	.35
August	.35	.35	.35	.35
September	.35	.35	.35	.35
October	.35	.35	.40	.35
November	.35	.35	.40	.40
December	.35	.35	.40	.40
Year	.35	.35	.40	.35

Xylene, Nitration

In February, 1917, the price was $1.20 per gallon.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.55	$0.55	$0.55	$0.55
February	.55	.55	.55	.55
March	.55	.55	.55	.50
April	.55	.55	.50	.50
May	.55	.55	.50	.50
June	.55	.55	.50	.50
July	.55	.55	.50	.50
August	.55	.55	.50	.50
September	.55	.55	.50	.50
October	.55	.55	.50	.50
November	.55	.55	.50	.50
December	.55	.55	.50	.50
Year	.55	.55	.55	.50

Acids

Benzoic, Technical

October 18, 1871, the price was 30c. per ounce; 1881, 22c.; 1891, 8c.; 1901, 12½c.; 1911, 11¼c.; 1913, 23c. per pound; 1916, December, $9.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.57	$0.57	$0.57	$0.57
February	.57	.57	.57	.57
March	.57	.57	.57	.57
April	.57	.57	.57	.57
May	.57	.57	.57	.57
June	.57	.57	.57	.57
July	.57	.57	.57	.57
August	.57	.57	.57	.57
September	.57	.57	.57	.57
October	.57	.57	.57	.57
November	.57	.57	.57	.57
December	.57	.57	.57	.57
Year	.57	.57	.57	.57

Cresylic, Pale, 97 to 99 Percent

In August, 1918, the price was $1.25 per gallon.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.60	$0.60	$0.72	$0.72
February	.60	.60	.72	.72
March	.60	.60	.73	.73
April	.63	.60	.73	.73
May	.65	.65	.73	.73
June	.65	.65	.73	.73
July	.65	.65	.73	.73
August	.66	.65	.73	.73
September	.66	.66	.72	.72
October	.75	.72	.72	.72
November	.72	.72	.78	.72
December	.72	.72	.78	.65
Year	.75	.60	.78	.65

H

In August, 1918, the price was $3.40 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.60	$0.60	$0.68	$0.68
February	.60	.60	.68	.68
March	.60	.60	.68	.68
April	.60	.60	.68	.68
May	.60	.60	.68	.68
June	.60	.60	.68	.68
July	.60	.60	.68	.68
August	.60	.60	.68	.68
September	.60	.60	.68	.68
October	.60	.60	.68	.68
November	.68	.60	.68	.68
December	.68	.68	.68	.68
Year	.68	.60	.68	.68

Picric

In August, 1881, the price was 45c. per pound; 1891, 52½c.; 1901, 40c.; 1911, 55c.; 1913, 50c.; 1916, May, $1.50.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.30	$0.30	$0.40	$0.40
February	.30	.30	.40	.40
March	.45	.30	.40	.40
April	.45	.45	.40	.40
May	.45	.45	.40	.40
June	.45	.45	.40	.40
July	.45	.45	.30	.30
August	.45	.45	.30	.30
September	.45	.45	.30	.30
October	.45	.45	.30	.30
November	.45	.45	.30	.30
December	.45	.40	.30	.30
Year	.45	.30	.40	.30

Salicylic, Technical

On August 1, 1881, the price was $1.40 per pound; 1891, $1.12; 1901, 39½c.; 1911, 32c.; 1913, 25c.; 1916, April, $4.25.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.37	$0.37	$0.37	$0.37
February	.37	.37	.37	.37
March	.37	.37	.37	.37
April	.37	.37	.37	.37
May	.37	.37	.37	.37
June	.37	.37	.37	.37
July	.37	.37	.37	.37
August	.37	.37	.37	.37
September	.37	.37	.37	.37
October	.37	.37	.37	.37
November	.37	.37	.37	.37
December	.37	.37	.37	.37
Year	.37	.37	.37	.37

Intermediates

Alphanaphthol, Technical

In December, 1917, the price was $1.25 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.60	$0.60	$0.60	$0.60
February	.60	.60	.60	.60
March	.60	.60	.60	.60
April	.60	.60	.60	.60
May	.60	.60	.60	.60
June	.60	.60	.60	.60
July	.60	.60	.60	.60
August	.60	.60	.60	.60
September	.60	.60	.60	.60
October	.60	.60	.60	.60
November	.60	.60	.60	.60
December	.60	.60	.60	.60
Year	.60	.60	.60	.60

Alphanaphthylamine

In January, 1917, the price was $1.35 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.35	$0.35	$0.32	$0.32
February	.35	.35	.32	.32
March	.35	.35	.32	.32
April	.35	.35	.32	.32
May	.35	.35	.32	.32
June	.35	.35	.32	.32
July	.35	.35	.32	.32
August	.35	.35	.32	.32
September	.35	.35	.32	.32
October	.35	.35	.32	.32
November	.35	.35	.32	.32
December	.35	.35	.32	.32
Year	.35	.35	.32	.32

Anilin Oil (*Drums*)

August 16, 1881, the price was 26c. per pound; October 18, 1891, 25c.; 1901, 9c.; 1911, 10¾c.; 1913, 10¼c.; 1916, December, 95c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.15	$0.14¾	$0.15	$0.15
February	.14¾	.14¾	.15	.15
March	.14¾	.14¾	.15	.15
April	.14¾	.14¾	.15	.15
May	.14¾	.14¾	.15	.15
June	.14¾	.14¾	.15	.15
July	.14¾	.14¾	.15	.15
August	.14¾	.14¾	.15	.15
September	.14¾	.14¾	.15	.15
October	.14¾	.14¾	.15	.15
November	.15	.15	.15	.15
December	.15¾	.15¾	.15	.15
Year	.15¾	.14¾	.15	.15

Anilin Salt

August 16, 1881, the price was 36c. per pound; October 18, 1891, 21c.; 1901, 8¼c.; 1911, 9½c.; 1913, 8¾c.; 1916, December, $1.35.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.24	$0.24	$0.24	$0.24
February	.24	.24	.24	.24
March	.24	.24	.24	.24
April	.24	.24	.24	.24
May	.24	.24	.24	.24
June	.24	.24	.24	.24
July	.24	.24	.24	.24
August	.24	.24	.24	.24
September	.24	.24	.24	.24
October	.24	.24	.24	.24
November	.24	.24	.24	.24
December	.24	.24	.24	.24
Year	.24	.24	.24	.24

Betanaphthylamine, Technical

In January, 1918, the price was $2 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.65	$0.65	$0.65	$0.65
February	.65	.65	.65	.65
March	.65	.65	.65	.65
April	.65	.65	.65	.65
May	.65	.65	.65	.65
June	.65	.65	.65	.65
July	.65	.65	.65	.65
August	.65	.65	.65	.65
September	.65	.65	.65	.65
October	.65	.65	.65	.65
November	.65	.65	.65	.65
December	.65	.65	.65	.65
Year	.65	.65	.65	.65

Betanaphthol, Technical

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.22	$0.22	$0.22	$0.22
February	.22	.22	.22	.22
March	.22	.22	.22	.22
April	.22	.22	.22	.22
May	.22	.22	.22	.22
June	.22	.22	.22	.22
July	.22	.22	.22	.22
August	.22	.22	.22	.22
September	.22	.22	.22	.22
October	.22	.22	.22	.22
November	.22	.22	.22	.22
December	.22	.22	.22	.22
Year	.22	.22	.22	.22

Benzaldehyde, Technical

In April, 1918, the price was $5.50 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.65	$0.65	$0.65	$0.65
February	.65	.65	.60	.60
March	.65	.65	.60	.60
April	.65	.65	.60	.60
May	.65	.65	.60	.60
June	.65	.65	.60	.60
July	.65	.65	.60	.60
August	.65	.65	.60	.60
September	.65	.65	.60	.60
October	.65	.65	.60	.60
November	.65	.65	.60	.60
December	.65	.65	.60	.60
Year	.65	.65	.65	.60

Benzidin Base

In March, 1917, the price was $2.10 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.70	$0.70	$0.70	$0.70
February	.70	.70	.70	.65
March	.74	.72	.67	.65
April	.72	.72	.67	.67
May	.72	.72	.67	.67
June	.72	.70	.67	.67
July	.70	.70	.67	.67
August	.70	.70	.67	.67
September	.70	.70	.67	.67
October	.70	.70	.67	.67
November	.70	.70	.67	.67
December	.70	.70	.67	.67
Year	.74	.70	.70	.65

Benzyl Chloride, 95 to 97 Percent

In May, 1918, the price was $2.70 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.30	$0.30	$0.30	$0.30
February	.30	.30	.30	.30
March	.30	.30	.30	.30
April	.30	.30	.30	.30
May	.30	.30	.30	.30
June	.30	.30	.30	.30
July	.30	.30	.30	.30
August	.30	.30	.30	.30
September	.30	.30	.30	.30
October	.30	.30	.30	.30
November	.30	.30	.30	.30
December	.30	.30	.30	.30
Year	.30	.30	.30	.30

Diethylanilin

In May, 1918, the price was $5.50 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.58	$0.58	$0.55	$0.55
February	.58	.58	.55	.55
March	.58	.58	.55	.55
April	.58	.58	.55	.55
May	.58	.58	.55	.55
June	.58	.58	.55	.55
July	.58	.58	.55	.55
August	.58	.58	.55	.55
September	.58	.58	.55	.55
October	.55	.55	.55	.55
November	.55	.55	.55	.55
December	.55	.55	.55	.55
Year	.58	.55	.55	.55

Dimethylanilin

In May, 1920, the price was $1.65 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.32	$0.32	$0.31	$0.31
February	.32	.32	.31	.31
March	.32	.32	.31	.31
April	.32	.32	.30	.30
May	.32	.32	.30	.30
June	.32	.32	.30	.30
July	.32	.32	.30	.30
August	.32	.32	.30	.27
September	.32	.32	.27	.27
October	.32	.32	.27	.27
November	.31	.31	.27	.27
December	.31	.31	.27	.27
Year	.32	.31	.31	.27

Dinitrobenzene

In September, 1917, the price was 50c. per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.15	$0.15	$0.15	$0.15
February	.15	.15	.15½	.15
March	.15	.15	.15½	.15½
April	.15	.15	.15½	.15½
May	.15	.15	.15½	.15½
June	.15	.15	.15½	.15½
July	.15	.15	.15½	.15½
August	.15	.15	.15½	.15½
September	.15	.15	.15½	.15½
October	.15	.15	.15½	.15½
November	.15	.15	.15½	.15½
December	.15	.15	.15½	.15½
Year	.15	.15	.15½	.15

Diphenylamine

In January, 1917, the price was $1.10 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.48	$0.48	$0.42	$0.42
February	.48	.48	.42	.42
March	.48	.48	.42	.42
April	.48	.48	.42	.42
May	.48	.48	.42	.42
June	.48	.48	.42	.42
July	.48	.48	.42	.42
August	.48	.48	.42	.42
September	.48	.48	.42	.42
October	.45	.45	.42	.42
November	.45	.45	.42	.42
December	.45	.42	.42	.42
Year	.48	.42	.42	.42

Nitrobenzene

August 16, 1881, the price was 32c. per pound; October 18, 1891, 15c.; 1901, 7¾c.; 1911, 6¾c.; 1913, 6½c.; 1917, February, 25c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.09¼	$0.09¼	$0.08½	$0.08½
February	.09¼	.09¼	.08½	.08½
March	.09¼	.09¼	.08½	.08½
April	.09¼	.09¼	.09½	.08½
May	.09¼	.09¼	.09½	.08½
June	.09¼	.09¼	.09½	.09½
July	.09¼	.09¼	.09½	.09½
August	.09¼	.09¼	.09½	.09½
September	.09¼	.09¼	.09½	.09½
October	.09½	.09½	.09½	.09½
November	.09	.09	.09½	.09½
December	.09	.09	.09½	.09
Year	.09½	.09	.09½	.08½

Metanitroparatoluidin

In September, 1918, the price was $7 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.75	$1.75	$1.70	$1.70
February	1.75	1.70	1.70	1.70
March	1.70	1.70	1.70	1.70
April	1.70	1.70	1.70	1.70
May	1.70	1.70	1.70	1.70
June	1.70	1.70	1.70	1.70
July	1.70	1.70	1.70	1.70
August	1.70	1.70	1.70	1.70
September	1.70	1.70	1.70	1.70
October	1.70	1.70	1.70	1.70
November	1.70	1.70	1.70	1.50
December	1.70	1.70	1.50	1.50
Year	1.75	1.70	1.70	1.50

Metaphenylenediamine

In June, 1917, the price was $2.05 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.90	$0.90	$0.84	$0.84
February	.90	.90	.84	.84
March	.90	.90	.84	.84
April	.90	.90	.84	.84
May	.90	.90	.84	.84
June	.90	.90	.84	.84
July	.90	.90	.84	.84
August	.90	.90	.84	.84
September	.90	.90	.84	.84
October	.90	.90	.84	.84
November	.90	.90	.84	.84
December	.90	.84	.84	.84
Year	.90	.84	.84	.84

Monoethylanilin

In September, 1918, the price was $1.85 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.05	$1.05	$1.05	$1.05
February	1.05	1.05	1.05	1.05
March	1.05	1.05	1.05	1.05
April	1.05	1.05	1.05	1.05
May	1.05	1.05	1.05	1.05
June	1.05	1.05	1.05	1.05
July	1.05	1.05	1.05	1.05
August	1.05	1.05	1.05	1.05
September	1.05	1.05	1.05	1.05
October	1.05	1.05	1.05	1.05
November	1.05	1.05	1.05	1.05
December	1.05	1.05	1.05	1.05
Year	1.05	1.05	1.05	1.05

Orthonitrophenol

In October, 1918, the price was $1.70 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.85	$0.85	$0.85	$0.85
February	.85	.85	.85	.85
March	.85	.85	.85	.85
April	.85	.85	.85	.85
May	.85	.85	.85	.85
June	.85	.85	.85	.85
July	.85	.85	.85	.85
August	.85	.85	.85	.85
September	.85	.85	.85	.85
October	.85	.85	.85	.85
November	.85	.85	.85	.85
December	.85	.85	.85	.85
Year	.85	.85	.85	.85

Orthonitrotoluene

In January, 1917, the price was 65c. per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.13	$0.13	$0.16	$0.16
February	.13	.13	.16	.16
March	.13	.13	.16	.16
April	.13	.13	.16	.16
May	.13	.13	.16	.16
June	.13	.13	.16	.16
July	.13	.13	.16	.16
August	.13	.13	.16	.16
September	.13	.13	.16	.16
October	.13	.13	.16	.16
November	.13	.13	.16	.16
December	.16	.13	.16	.16
Year	.16	.13	.16	.16

Orthotoluidin

In March, 1918, the price was $1.25 per pound.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.25	$0.25	$0.28	$0.27
February	.25	.25	.27	.27
March	.26	.25	.27	.27
April	.26	.26	.27	.25
May	.26	.25	.25	.25
June	.25	.25	.25	.25
July	.25	.25	.25	.25
August	.25	.25	.25	.25
September	.25	.25	.25	.25
October	.25	.25	.25	.25
November	.25	.25	.25	.25
December	.28	.25	.25	.25
Year	.28	.25	.28	.25

Paraminophenol, Base

In March, 1918, the price was $5.50 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.15	$1.15	$1.00	$1.00
February	1.15	1.10	1.00	1.00
March	1.10	1.10	1.00	1.00
April	1.10	1.10	1.00	1.00
May	1.10	1.10	1.00	1.00
June	1.10	1.10	1.00	1.00
July	1.10	1.10	1.00	1.00
August	1.10	1.10	1.00	1.00
September	1.10	1.10	1.00	1.00
October	1.10	1.10	1.00	1.00
November	1.05	1.05	1.00	1.00
December	1.05	1.00	1.00	1.00
Year	1.15	1.00	1.00	1.00

Paranitranilin

In October, 1918, the price was $1.90 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.52	$0.52	$0.52	$0.52
February	.52	.52	.52	.52
March	.52	.52	.52	.52
April	.52	.52	.52	.52
May	.52	.52	.52	.52
June	.52	.52	.52	.52
July	.52	.52	.52	.52
August	.52	.52	.52	.52
September	.52	.52	.52	.52
October	.52	.52	.55	.55
November	.52	.52	.55	.55
December	.52	.52	.55	.55
Year	.52	.52	.55	.52

Paranitrophenol

In June, 1918, the price was $1.40 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.55	$0.55	$0.55	$0.55
February	.55	.55	.55	.55
March	.55	.55	.55	.55
April	.55	.55	.55	.55
May	.55	.55	.55	.55
June	.55	.55	.55	.55
July	.55	.55	.55	.55
August	.55	.55	.55	.55
September	.55	.55	.55	.55
October	.55	.55	.55	.50
November	.55	.55	.50	.50
December	.55	.55	.50	.50
Year	.55	.55	.55	.50

Paratoluidin

In January, 1918, the price was $2.50 per pound.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.48	$0.45	$0.40	$0.40
February	.45	.45	.40	.40
March	.45	.45	.40	.40
April	.42	.38	.39	.39
May	.38	.38	.39	.39
June	.38	.38	.39	.38
July	.38	.38	.38	.38
August	.45	.38	.38	.38
September	.45	.45	.38	.38
October	.45	.45	.38	.38
November	.45	.45	.38	.38
December	.45	.40	.38	.38
Year	.48	.38	.40	.38

Phthalic Anhydride, Technical

In December, 1917, the price was $6 per pound.

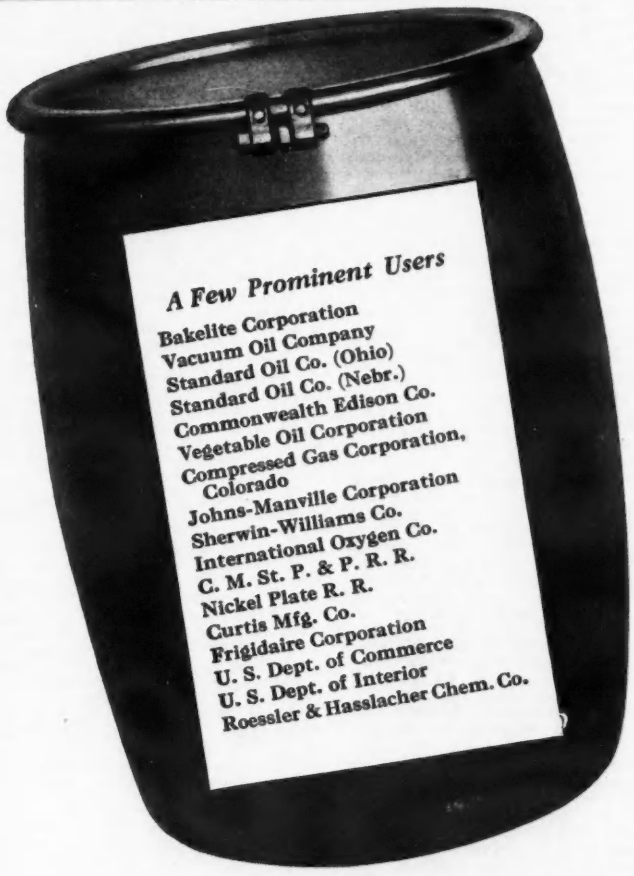
	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.18	$0.18	$0.18	$0.18
February	.18	.18	.18	.18
March	.18	.18	.18	.18
April	.18	.18	.18	.18
May	.18	.18	.18	.18
June	.18	.18	.18	.18
July	.18	.18	.18	.18
August	.18	.18	.18	.18
September	.18	.18	.18	.18
October	.18	.18	.18	.18
November	.18	.18	.18	.18
December	.18	.18	.18	.18
Year	.18	.18	.18	.18

Resorcinol, Technical

In December, 1911, the price was 80c. per pound; 1917, December, $9.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.25	$1.25	$1.25	$1.25
February	1.25	1.25	1.25	1.25
March	1.25	1.25	1.25	1.25
April	1.25	1.25	1.25	1.25
May	1.25	1.25	1.25	1.25
June	1.25	1.25	1.25	1.25
July	1.25	1.25	1.25	1.25
August	1.25	1.25	1.25	1.25
September	1.25	1.25	1.25	1.25
October	1.25	1.25	1.25	1.25
November	1.25	1.25	1.25	1.25
December	1.25	1.25	1.25	1.25
Year	1.25	1.25	1.25	1.25

(Continued on page 62)



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Dyestuffs and Tanstuffs: Market Review

All predictions to the contrary nothwithstanding our highly organized tanning industry credited with a production of leather fully equal to the total production of Europe including the United Kingdom did not in 1928 reach the heighths of prosperity which had been forecast early in the year. Despite the fact that American tanneries in 1928 used approximately 20,000,000 cattle hides, representing all of the available supplies, and that in addition they imported some 30 percent more hides from foreign sources, the total consumption of dyestuffs and tanstuffs last year did not reach new records. This generality did not apply to the market as a whole, as there were a good many instances where consumption of special products the like of bichromates actually did reach new high totals.

When it was considered, however, that 1928 was a year in which political disturbances and strikes were holding up industrial operations and that some of the most important branches of the textile industry were disrupted by strikes which closed the principal textile mills for more than 50 percent of their normal operating periods, it was small wonder that the absorptive capacity of the market was interfered with. While a great many foreign controlled products were quoted at substantially higher levels in 1928 than they were in the preceding year, the fact was that dealers were frequently put to it to find a broad enough outlet for all of their stock to insure a free market. One result of this condition was that the average prices realized in 1928 were substantially less than those secured in the year before. The best illustration of this was in the net decline in weighted index numbers from 163.4 at the first of the year to 154.2 as the year ended.

The market for Sicilian sumac which had been virtually disorganized toward the end of 1927 when a net loss of $38 per ton from the high of the preceding year to a level of $62 per ton had set in, was further demoralized during the greater part of 1928 and not until the last three months of the year was there any semblance of a revival of stability. For long stretches the best prices that could be secured for sumac ranged from $54 to $60 per ton. These prices were deemed to be so low that they did not actually warrant the trouble of cultivation in the primary markets and late in the year when cognizance was taken of the steadily mounting living and labor costs in Italy some effort was finally made to get the market for sumac back on a basis which would warrant a continuance of its cultivation. While it was recognized that Sicily sumac was valuable as a tanning agent for sheep skins because of its light color and the soft flexible quality of the leather produced, cultivation of the product had been allowed to decline, and weeds had been allowed to grow in with the crop thus lowering its quality. The growers had in fact turned their attention to other crops such as almonds, lemons and sheep farms and gave every indication of neglecting sumac until Italian Government authorities finally sought a remedy for the situation urging that some change in the method of selling the product be adopted in order that the industry may be continued. Thus in the closing days of the year prices improved to the extent of $12 per ton to a level of about $76.

Irregularity in Valonia

Valonia, a most valuable tanning agent native to Asia Minor and Greece, the solid extract of which contains about 60 percent of tannin, pursued a decidedly checkered career. The market was virtually bare of stocks at the outset of the year when the mixtures were being held for $60 to $62 per ton and the beards at $68 per ton. Early in the Spring the beards touched $74 to $77 per ton and the mixtures $61 to $64 per ton and shortly thereafter virtually all offers dried up. While domestic tanners were clamoring to secure supplies of the product it developed that the keenly competing European tanners were securing large quantities of it. Moreover, considerable quantities were being diverted to the Far East. Strangely enough, the importations during the first four months of the year made a good showing standing at 5,771,319 pounds, compared with 5,231,693 in the corresponding period of the year before, but it was believed that a substantial portion of these importations had been arranged in the closing days of the preceding season. Offerings of new crop valonia began to figure early in the summer months, thus mixtures were being offered at $56 to $58 for September-October shipment and beards at $72 per ton. Thenceforward new crop offers were a factor of increasing importance, and as the primary market shippers were only getting rather limited responses to their offers, they began to offer concessions. The closing days of the year witnessed a great deal of irregularity as regards valonia. Offers of the beards became much freer, whereas the mixtures recovered some lost ground only to lose it again and close the year at $44 to $45 per ton.

Chinese Egg Products

At no time during the course of the 1928 calendar year were supplies of any of the Chinese egg products free. Both egg albumen and egg yolk had opened the year in comparatively firm shape, but during the first quarter the former had reacted about 5c. per pound to a basis of 78c., whereas egg yolk granular and spray were down 3c. from the opening figures at 67c. to 75c. per pound respectively. In the case of albumen the market was a rather stable affair throughout the year, although egg yolk showed a pronounced upward tendency in the closing days of the year with an improvement in prices amounting to about 4c. to 5c. per pound from the low point. Most of the egg plants in China were suspended during January, but opening prices were announced from Tientsin, China, as of February 7, by the Ching Hsing Egg Factory at Paotingfu, Chihli Province. This factory takes the lead each year in fixing prices for "Paotingfu" dried egg products. These products are dried hen egg albumen and sprayed hen egg yolk. The prices of the above-mentioned included assorted shipments (5 tons albumen and 12 tons sprayed yolk):—Albumen—113 Tientsin taels a picul, f.o.b. Paotingfu. (About $56.14 per 100 pounds); sprayed yolk—105 Tientsin taels a picul, f.o.b. Paotingfu. (About $52.17 per 100 pounds). Single shipments (i. e., no specified assortments):—Albumen—115 Tientsin taels a picul, f.o.b. Paotingfu. (About $57.14 per 100 pounds.); sprayed yolk—108 Tientsin taels a picul, f.o.b. Paotingfu. (About $53.66 per 100 pounds.); to arrive at f.o.b. Tientsin prices, add 2 Tientsin taels a picul ($0.99⅜ per 100 pounds) to the Paotingfu price. (1 Tientsin tael equals U. S. $0.66¼). The c.i.f. New York price, for assorted shipments, worked out at approximately 64 cents a pound for albumen, and 60 cents a pound for sprayed yolk. The 1928 opening prices were approximately 10 percent over the 1927 opening prices.

The opening prices for Honan Province egg products, dried hen egg albumen and granular hen egg yolk, followed the opening "Paotingfu" prices by about a week as these were considered as being of better quality than Honan egg products. The early prospects seemed to favor seasonal deliveries of egg albumen and yolk. Late in the fall it became evident that China had experienced an unusually favorable season, for exports of frozen eggs had reached a total of 5,000 short tons, as compared with 1,250 short tons on the corresponding date a year ago. The demand for dried egg albumen, both from the United States and from Europe, proved to be very weak, however, and although stocks in China were large they were not of a quality suitable for the American market. Egg albumen had declined to 48c. per pound and spray yolk to 49c. per pound during the latter half of October. At this time the native plants were still manufacturing dried yolk and albumen, but their output was small because of seasonally light egg production. Statistics on imports of Chinese eggs into the United States showed that during the first nine months of the present calendar year imports of frozen eggs from China totaled 9,837,000 pounds, against 2,489,000 pounds during the same period in 1927. Imports of dried whole eggs and dried and frozen yolks also increased, but takings of dried and frozen albumen fell off.

Banner Year in Bichromates

In line with predictions that 1928 would be a banner year in the market for bichromates, shipments started to increase substantially during the early months of the year and showed progressive gains during the first quarter. The chemical was in fact entering into such a diversified line of industries that shipments showed progressive gains in each succeeding month. An extensive demand developed from some of the large consuming industries such as color manufacturers, the textile industry, tanners, chromium platers, printing ink manufacturers and other consumers, in addition to an extensive foreign business which became increasingly important as the year wore on. The market was consistently active throughout the first three months of the year. The impression was gradually finding expression that a higher market might be looked for. Early in April the principal producers took emphatic action by placing an advance of ¾c. per pound into effect, which established the potash at 8¾c. per pound, contracts, in minimum carload lots of 36,000 pounds, while for less than car lots the quotation was advanced to 9c. The soda was likewise advanced ¾c. per pound and established at 7c. per pound, car lots, works, and 7¼c., less than car lots, works. Among the more potent factors actuating producers in placing these higher valuations into effect was a $5 per ton increase in the cost of sulphur, as well as the substantially higher prices which were ruling for chrome ore. It was thought likely that the above schedules might hold until the end of the year, especially since the higher prices would materially advantage holders of contracts outstanding at the lower price basis. However, this did not prove to be the case, for the demand developed along such urgent lines during the early fall months and up to the close of December, which period was marked by an almost total absence of price cutting from any direction, that a further advance of ¼c. per pound was announced in the potash during the closing days of the year, establishing the market at 9c. per pound, car lots, casks, and 9¼c. less than car lots, casks. The producers retained their car lot quotation of 7c. per pound for the soda description, but in the case of less than car lot quantities the price was raised ¼c. and put up to 7½c. per pound in casks. Record-breaking shipments were being made to consumers just prior to the advance, both against old and new contracts, and the healthy conditions ruling in the market were attested to in the generally small stocks which were being carried by the consuming trades. Although some of the producers were in a position of independence so far as raw material supplies were concerned, maintaining as they did their own chrome ore deposits in New Caledonia, the fact was that higher ocean transportation rates for this product throughout the year was a subject of constant uncertainty.

Cornstarches and Dextrin Up

The principal producers of cornstarches and dextrins, aware of the unsatisfactory marketing conditions which had prevailed in the preceding twelve months, took definite action in the direction of securing better returns for their product early in 1928. In January they announced an upward revision in the amount, 25c. per 100 pounds, both in the case of cornstarches and dextrins. At the time of this announcement corn had undergone a substantial price appreciation, and selling values for the refined products were well out of line with the actual position of the raw material. The effect of the jump was to bring in perhaps the widest demand which had been seen since the preceding month of May. The advance was followed by successive advances in the amount of 15c. per 100 pounds in March, 40c. in April, and 10c. per 100 pounds in June. At the close of the year British corn dextrin, as well as canary corn dextrin and pearl and powdered cornstarches, were selling at a net advance of $1 per 100 pounds as compared with the quotations ruling at the start of the year. It was noteworthy that consumers were given ample notification prior to each advance and that an immense volume of contract bookings usually resulted. By the end of April corn had jumped to about the highest price in a period of four years. Late in April the refined starch products had shown net gains of over 105 points from the opening levels of the year because of the fantastic course which the corn market was pursuing. Not until this date did resale offers of either one of the manufactured products begin to figure. However, second hand offerings did begin to come out, and later on, in June, as government crop estimates were released, indicating that corn acreage would be about 4.8 percent greater than the year before, the market started to react following still another 10 point advance in the official quotation.

Up to the end of June the outlook in the corn market had been decidedly bearish as weather conditions over the corn belt had been unfavorable. The Department of Agriculture's early estimate was that the corn crop would out-turn some 32,500,000 bushels less corn than in 1927. Throughout the early Fall months the tone of the market was being quite well maintained under the bullish estimates being received with reference to the progress of the corn crop which threatened at one time to out-turn some 100,000,000 bushels smaller than that of the year before. In the early part of September the Department of Agriculture sent out estimates that the corn crop would produce about 2,930,586,000 bushels, in contrast with 3,029,561,000 bushels in the preceding season. This produced a 10c. per 100 pounds decline in cornstarches during October, but was without influence in the position of the market for dextrins. The producers granted this concession in the form of a trade allowance and this was subsequently extended until both large and small buyers were securing special trade allowances in the amount of 30c. and 10c. per 100 pounds in cornstarches. Coincident with the reactionary trend, the grain market had been undergoing a transition from old to new crop as the final government report for the season had shown that the corn crop had actually out-turned some 2,839,959,000 bushels as against 2,786,000,000 bushels the year before, which was an increase of 53,000,000 bushels. The total crop plus the carryover of some 59,000,000 bushels made the aggregate available supplies some 2,896,000,000 bushels for the season. It was seen thus that the corn crop was not much more than equal to that of the preceding season, and that because of a huge potential foreign demand, the cereal was likely to become the speculative leader of the grain markets for some months to come. While admitting the strong potentialities of the grain markets, producers of starches and dextrins were encountering increasing competition in the sales of their products and rather than continue the artificial price levels that had been ruling they announced a sharp downward revision at the end of the year which amounted to 30c. per 100 pounds in the case of the various grades, of dextrin, and 40c. as regards the various grades of cornstarch. The latter changes were in the nature of a downward readjustment to conform to buyers' ideas of values and did not in the slightest reflect the strong conditions which were still operative in the grain markets.

Natural Tannins Quite Firm

In reverting to some of the natural tanning materials it was of interest to note that decidedly good prices were realized throughout the year for divi divi, a Venezuelan product with a tannin content reaching 40 to 45 percent. High freight rates, always the determining factor in the product, were incidental in producing a price range varying from $52 to $62 per ton. The consumption in 1928 was something in the vicinity of 1,500 tons and it was known that some rather substantial quantities of the extract were finding their way into the hands of the domestic tanners. Towards the end of June the producers of the extract were successful in renewing contracts for the 25 percent extract with tanners in just as large a volume as they had experienced in the preceding six months and the result was a well sustained market during the last half of the year. Closing quotations for the raw material for the year were off about $3 to $4 per ton from the best levels.

Fair prices were realized for myrobalans during 1928. The market was rather tightly controlled in India and this operated to prevent any erratic price fluctuations. Our importations of the nuts in 1927 had been in excess of 15,300 tons and it was believed that the consumption in 1928 was fully up to this record. The average price range for the J1's last year was from $42 to $45 per ton, which was closely in line with the average prices received the year before. During the early part of last year a considerable portion of these stocks was diverted to the European markets which had a strengthening influence here, but the last half of the year was generally marked by steady conditions throughout the markets.

The supply of gambier from India appeared to be steady and continuous throughout the year and no great amount of change was noted either in the common, plantation, or Singapore varieties. Something in excess of 2,000,000 pounds was consumed by the extract manufacturing industry. The leather and silk trades were periodical buyers and kept the market in an almost constant state of activity. During the first six months of the year about 169,000 pounds came in in contrast with 147,000 pounds in the same time a year ago. Cutch followed gambier a close second, and was quite firmly maintained throughout the year. The greatest strength came in the Rangoon descriptions while the Borneo grades, despite increasing competition which was encountered from the duty free Phillippine grades, were being quite firmly held in all quarters of the trade. Some rather substantial advances were placed into effect in the British markets during the Fall months.

Quebracho and Logwood

The large domestic producers of quebracho extracts were able to maintain their prices throughout 1928. The uninterrupted flow of the raw material from the Argentine enabled the producers of the extracts to maintain steady shipments throughout the year. The call for the solid extract which contains the highest tannin content was continuous and the producers adhered steadily to their price basis of

5¼c. to 5¾c. per pound for the 63 percent in barrels.

Much the same steady conditions which ruled the markets for quebracho were evidenced in the market for logwood and fustic. The shipment quotations on logwood sticks from Hayti stood at $24 to $25 per ton throughout the year, whereas fustic sticks for shipments were generally being quoted at $25 to $26 per ton. It was estimated that something over 3,000,000 pounds of logwood extracts were consumed in the tanning industry. Chestnut extract, one of the most important tanning agents, was being well maintained by the producers throughout the year at 1½c. to 1¾c. per pound in tanks and at 2c. to 2¼c. per pound in barrels. Upwards of 200,000,000 pounds of the solid and liquid extracts were being utilized in the tanning industry.

Among the natural dye materials one of the most interesting price developments of the year was the sharp appreciation in values for gray and Teneriffe silver grades of cochineal from a basis of 84c. per pound to 95c. per pound. Early in September shipment prices from the Canary Islands had been advanced to a point where they reached $1 per pound. The manufacturers of the dry color carmine were faced with a shortage of raw material and some of them were forced to pay the higher prices. At this time stocks of the black description were reported to have become virtually exhausted.

Indigo Production Declines

The outlet for natural indigo proved to be a restricted one throughout 1928. The synthetic product had made decided inroads into the usual market for the natural product. Official Indian estimates covering five of the largest growing indigo provinces came out early in November and showed a net decline in the amount of about 10 percent in the yield of natural indigo. The total area under cultivation was estimated at some 53,300 acres, a decline of 10 percent. The total yield of dye was estimated at some 11,200 hundredweights compared with 11,200 hundredweights the year before; The detailed figures for the various provinces included:—

	Area (Acres).		Yield (Cwts. of Dye).		Yield per acre (lb).	
	1928-29.	1927-28.	1928-29.	1927-28.	1928-29.	1927-28.
Madras	28,500	29,400	6,500	7,100	26	27
Punjab	13,300	7,100	2,300	1,300	19	21
Behar and Orissa	4,800	12,400	700	1,600	16	14
United Provinces	4,800	7,500	500	900	12	13
Bombay (including Sind and Indian States)	1,900	2,600	200	300	12	13
Total	53,300	59,000	10,200	11,200	21	21

The normal outlets for the various chemical mordants was fully up to previous totals last year. There were some decidedly erratic fluctuations in tin crystals produced by wide swings in quotations for the metal. Zinc dust was likewise in a position of irregularity depending on the changes in the metal. The mean fluctuation ranged from 8c. per pound car lots works, to 8¾c. per pound car lots works. Acetate of soda was in a decidedly firm position early in 1928, but became reactionary later on when it declined from 6c. to 5c. per pound. Whereas producers of yellow prussiate of soda put out a contract quotation of 11½c. per pound car lots works, prompt shipment goods were being moved rather freely on the basis of 12½c. to 13c. per pound. Most of the large buyers had covered themselves on contracts as the year drew to a close.

Dyestuffs and Tanstuffs: Record of Prices

Chemicals

Antimony Salts

October 18, 1871, the price was 11c. per pound; 1881, 6c.; 1891, 4c.; 1901, 16c.; 1911, 12c.; 1913, 11½c.; 1918, November, 75c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.28	$0.27	$0.25½	$0.25½
February	.27	.27	.25½	.25½
March	.27	.26½	.25½	.25½
April	.26½	.26½	.25½	.25½
May	.26½	.26½	.25½	.25½
June	.26½	.26½	.25½	.25½
July	.26½	.26½	.25½	.25½
August	.26½	.25½	.25½	.25½
September	.25½	.25½	.25½	.25½
October	.25½	.25½	.25½	.25½
November	.25½	.25½	.25½	.25½
December	.25½	.25½	.25½	.25½
Year	.28	.25	.25½	.25½

Potash Bichromate

October 18, 1871, the price was 23c. per pound; 1881, 16c.; 1891, 9¾c.; 1901, 8¼c.; 1911, 7⅞c.; 1913, 6¾c.; 1917, September, 50c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$0.08	$0.08	$0.08
February	.08	.08	.08	.08
March	.08¼	.08	.08¼	.08
April	.08¼	.08¼	.08¾	.08¾
May	.08¼	.08¼	.08¾	.08¾
June	.08¼	.08¼	.08¾	.08¾
July	.08¼	.08¼	.08¾	.08¾
August	.08¼	.08¼	.08¾	.08¾
September	.08¼	.08¼	.08¾	.08¾
October	.08¼	.08¼	.08¾	.08¾
November	.08¼	.08	.08¾	.08¾
December	.08¼	.08	.09	.08¾
Year	.08½	.08	.09	.08

Soda Acetate

October 18, 1871, the price was 58c. per pound; 1881, 40c.; 1891, 33c.; 1901, 4¼c.; 1911, 4c.; 1913, 3¾c.; 1918, July, 35c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04¾	$0.04¾	$0.05¾	$0.05¾
February	.04¾	.04¾	.06	.05¾
March	.04¾	.04½	.05¾	.05¾
April	.04½	.04½	.06	.05¾
May	.04½	.04½	.05¾	.05½
June	.04½	.04½	.05½	.05½
July	.04½	.04¼	.05½	.05½
August	.04½	.04½	.05½	.05½
September	.04½	.04½	.05½	.05½
October	.05	.04½	.05½	.05½
November	.05	.05	.05½	.05
December	.05¾	.05	.05	.05
Year	.05¾	.04½	.06	.05

Potash Prussiate, Yellow

October 18, 1871, the price was 41c. per pound; 1881, 23c.; 1891, 23¾c.; 1901, 13½c.; 1911, 13c.; 1913, 14c.; 1918, January, $1.30.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.19	$0.19	$0.18	$0.18
February	.19	.18½	.18	.17½
March	.18½	.18½	.17½	.17½
April	.18½	.18½	.17¾	.17½
May	.18½	.18¼	.17½	.17½
June	.18½	.18¼	.18	.17½
July	.18¼	.18¼	.18	.17½
August	.18¼	.18¼	.17½	.17½
September	.18¼	.18	.17½	.17½
October	.18½	.18	.19	.17½
November	.18	.18	.19	.19
December	.18	.18	.19	.19
Year	.19	.18	.19	.17½

Soda Bichromate

October 18, 1881, the price was 14¾c. per pound; 1891, 8c.; 1901, 6¼c.; 1911, 5¾c.; 1913, 4⅝c.; 1919, December, 35c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06¼	$0.06¼	$0.06¼	$0.06¼
February	.06¼	.06¼	.06¼	.06¼
March	.06¼	.06¼	.06¼	.06¼
April	.06¼	.06¼	.07	.07
May	.06¼	.06¼	.07	.07
June	.06¼	.06¼	.07	.07
July	.06¼	.06¼	.07	.07
August	.06¼	.06¼	.07	.07
September	.06¼	.06¼	.07	.07
October	.06¼	.06¼	.07	.07
November	.06¼	.06¼	.07	.07
December	.06¼	.06¼	.07	.07
Year	.06¼	.06¼	.07	.06¼

Soda Prussiate, Yellow

December 8, 1880, the price was 25c. per pound; October 18, 1891, 22c.; 1901, 10¼c.; 1911, 10¾c.; 1913, 10½c.; 1918, June, 75c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11¼	$0.11¼	$0.12	$0.12
February	.12¼	.12¼	.12	.11½
March	.12¾	.12	.11½	.11½
April	.12	.12	.11½	.11½
May	.12	.12	.11½	.11½
June	.12	.12	.11½	.11
July	.12	.12	.11	.11
August	.12	.12	.11	.11
September	.12	.12	.11	.11
October	.12	.12	.12	.11
November	.12	.12	.12	.12
December	.12	.12	.12½	.12
Year	.12¼	.11¼	.12½	.11

Tin Crystals

October 18, 1871, the price was 45c. per pound; 1881, 16½c.; 1891, 14c.; 1901, 20c.; 1911, 25½c.; 1913, 27½c.; 1918, September, 70c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.47	$0.46	$0.42	$0.40½
February	.47½	.45½	.40	.39
March	.48	.47	.39	.38
April	.47	.46½	.39½	.39
May	.46½	.46½	.38½	.38½
June	.45½	.44¼	.38	.36½
July	.45	.44½	.36½	.36
August	.45	.44½	.37	.36¼
September	.44½	.44	.37	.36½
October	.42	.42	.37½	.36½
November	.41½	.41	.38	.37½
December	.42	.42	.39	.37½
Year	.48	.41	.42	.36

Zinc Dust

March 23, 1881, the price was 15¼c. per pound; October 18, 1891, 7½c.; 1901, 5¾c.; 1911, 7⅞c.; 1913, 6½c.; 1916, January, 35c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.09½	$0.08	$0.08
February	.09¾	.09½	.08	.08
March	.10½	.09¾	.08	.08
April	.10	.09¾	.08¾	.08
May	.09¾	.09	.08¾	.08¾
June	.09¼	.09	.08¾	.08¾
July	.09¼	.09	.08¾	.08¾
August	.09½	.09½	.08¾	.08¾
September	.09¼	.09	.08¾	.08¾
October	.09	.09	.08¾	.08¾
November	.09	.09	.08¾	.08¾
December	.08	.08	.08¾	.08¾
Year	.10½	.08	.08¾	.08

Dyestuffs and Sizes

Albumen, Egg

October 18, 1871, the price was $1.25 per pound; 1881, 75c.; 1891, 33c.; 1901, 35c.; 1911, 50c.; 1913, 42c.; 1918, July, $2.40.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.90	$0.90	$0.83	$0.83
February	.90	.90	.80	.80
March	.90	.90	.80	.78
April	.94	.90	.78	.78
May	.94	.94	.78	.78
June	.94	.94	.80	.80
July	.94	.94	.80	.80
August	.86	.84	.80	.80
September	.84	.84	.80	.80
October	.83	.83	.78	.78
November	.83	.83	.78	.78
December	.83	.83	.78	.78
Year	.94	.83	.83	.78

Annatto Seed

October 18, 1871, the price was 30c. per pound; 1881, 20c.; 1891, 10c.; 1901, 8c.; 1911, 32c.; 1913, 7c.; 1917, January, 17c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$8.08	$0.07¼	$0.07¼
February	.08	.07½	.07¼	.07¼
March	.07½	.07	.07¼	.07¼
April	.07	.06½	.07¼	.07¼
May	.06½	.06½	.07¼	.07¼
June	.06½	.06½	.07¼	.07¼
July	.07	.07	.07¼	.07¼
August	.07	.07	.07¼	.07¼
September	.07	.07	.07¼	.07¼
October	.07	.07	.07¼	.07¼
November	.07	.07	.07½	.07½
December	.07¼	.07¼	.07½	.07½
Year	.08	.06½	.07½	.07¼

Cochineal, Gray

October 18, 1871, the price was 67½c. per pound; 1881, 43c.; 1891, 27c.; 1901, 20c.; 1911, 25½c.; 1913, 45c.; 1918, November, $1.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.82½	$0.77	$0.84	$0.84
February	.85½	.82½	.84	.84
March	.86½	.85½	.84	.84
April	.90	.86	.84	.84
May	.92	.90	.84	.84
June	.92	.92	.84	.84
July	.92	.92	.84	.84
August	.92	.87	.84	.84
September	.87	.87	.95	.95
October	.84	.83	.95	.95
November	.87	.84	.95	.95
December	.84	.84	.95	.95
Year	.92	.77	.95	.84

Cutch, Borneo

October 18, 1871, the price was 4½c. per pound; 1881, 5⅞c.; 1891, 7¼c.; 1901, 4¼c.; 1911, 5¾c.; 1913, 6c.; 1918, November, 27c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06¾	$0.06¾	$0.07	$0.07
February	.07	.06¾	.07	.07
March	.07	.07	.07	.07
April	.07¼	.07	.07½	.07
May	.07¼	.07¼	.08	.08
June	.07¼	.07¼	.08	.08
July	.07¼	.07¼	.08	.08
August	.07¼	.07¼	.08	.08
September	.07¼	.07	.08	.07½
October	.07	.07	.07½	.07½
November	.07	.07	.08	.07½
December	.07	.07	.08	.08
Year	.07¼	.06¾	.08	.07

Dextrin, Corn

October 18, 1871, the price was $8 per 100 pounds; 1881, $6.40; 1891, $6; 1901, $2.70; 1911, $2.87; 1913, $3.17; 1918, June, $9.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$4.12	$4.12	$4.02	$3.77
February	4.12	4.12	4.27	4.02
March	4.12	4.12	4.42	4.27
April	4.12	4.12	4.82	4.52
May	4.12	3.77	4.82	4.82
June	3.77	3.77	4.92	4.82
July	3.77	3.77	4.92	4.92
August	3.77	3.77	4.92	4.77
September	3.77	3.77	4.77	4.77
October	3.77	3.77	4.77	4.77
November	3.77	3.77	4.77	4.77
December	3.77	3.77	4.77	4.77
Year	4.12	3.77	4.92	3.77

Dextrin, Potato

May 24, 1881, the price was 8c. per pound; October 18, 1881, 7c.; 1901, 5½c.; 1911, 5½c.; 1913, 6c.; 1918, July, 20½c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08½	$0.08½	$0.08½	$0.08½
February	.08½	.08½	.08½	.08
March	.08½	.08¼	.08	.08
April	.08½	.08½	.08	.08
May	.08½	.08½	.08	.08
June	.08½	.08½	.08	.08
July	.08½	.08½	.08	.08
August	.08½	.08	.08	.08
September	.08	.08	.08	.08
October	.07¾	.07¾	.08	.08
November	.09	.07¾	.08	.08
December	.09	.08½	.08	.08
Year	.09	.07¾	.08½	.08

Sago Flour

October 18, 1871, the price was 8¾c. per pound; 1881, 3¾c.; 1889, 4c.; 1901, 2¾c.; 1911, 2⅝c.; 1913, 2¾c.; 1918, August, 10½c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.03½	$0.03½	$0.04½	$0.04½
February	.03½	.03½	.04½	.04½
March	.03½	.03½	.04½	.04½
April	.03½	.03½	.04½	.04½
May	.03½	.03½	.04½	.04½
June	.03½	.03½	.04½	.04½
July	.03½	.03½	.04½	.04½
August	.03½	.03½	.04½	.04½
September	.03½	.03½	.04½	.04½
October	.04¼	.03½	.04½	.04½
November	.04¼	.04¼	.04½	.04½
December	.04½	.04½	.04½	.04½
Year	.04½	.03½	.04½	.04½

Myrobalans J1

October 18, 1881, the price was $38 per ton; 1891, $35; 1901, $35; 1911, $23; 1913, $28; 1917, February, $68.

Per ton

	1927. H.	1927. L.	1928. H.	1928. L.
January	$41.00	$41.00	$43.00	$43.00
February	41.00	41.00	45.00	45.00
March	43.00	41.00	45.00	44.50
April	44.00	44.00	44.00	42.00
May	44.00	41.50	45.00	45.00
June	44.00	44.00	45.00	45.00
July	41.00	40.00	45.00	42.00
August	41.00	40.00	45.00	42.00
September	40.00	39.00	45.00	45.00
October	40.50	39.00	45.00	43.00
November	43.00	40.50	43.00	42.00
December	43.00	43.00	42.00	41.00
Year	44.00	39.00	45.00	41.00

Divi Divi

October 18, 1871, the price was $85 per ton; 1881, $70; 1891, $75; 1901, $32; 1911, $45; 1913, $45; 1919, November, $87.

Per ton

	1927. H.	1927. L.	1928. H.	1928. L.
January	$42.00	$40.00	$60.00	$52.00
February	45.00	44.00	60.00	57.00
March	47.00	44.00	62.00	60.00
April	49.00	47.00	60.00	60.00
May	49.00	47.00	60.00	60.00
June	47.00	47.00	60.00	59.00
July	47.00	47.00	59.00	57.00
August	47.00	47.00	57.00	57.00
September	50.00	49.00	58.00	58.00
October	50.00	50.00	58.00	57.00
November	50.00	50.00	58.00	57.50
December	52.00	50.00	57.50	57.00
Year	52.00	40.00	62.00	52.00

Fustic Sticks

October 18, 1871, the price was $22 per ton; 1881, $18; 1891, $26; 1901, $22; 1911, $22; 1913, $18; 1918, September, $80.

Per ton

	1927. H.	1927. L.	1928. H.	1928. L.
January	$27.00	$27.00	$25.00	$25.00
February	27.00	27.00	25.00	25.00
March	27.00	27.00	25.00	25.00
April	27.00	27.00	25.00	25.00
May	27.00	27.00	25.00	25.00
June	27.00	27.00	25.00	25.00
July	27.00	27.00	25.00	25.00
August	27.00	27.00	25.00	25.00
September	27.00	25.00	25.00	25.00
October	25.00	25.00	25.00	25.00
November	25.00	25.00	25.00	25.00
December	25.00	25.00	25.00	25.00
Year	27.00	25.00	25.00	25.00

Gambier Common

October 18, 1871, the price was 4⅜c. per pound; 1881, 3⅞c.; 1891, 5c.; 1901, 5¼c.; 1911, 6¾c.; 1913, 4½c.; 1916, December, 40c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07½	$0.07½	$0.07	$0.06½
February	.07½	.07¼	.06¾	.06¾
March	.07¼	.07¼	.06¾	.06
April	.07¼	.07¼	.06	.05½
May	.07¼	.07	.05½	.05½
June	.07¼	.07	.05½	.05½
July	.07¼	.07¼	.05¼	.05¼
August	.07¼	.07	.05¼	.05¼
September	.07	.07	.05¼	.05¼
October	.06½	.05¾	.05¼	.05¼
November	.06¾	.06½	.05½	.05¼
December	.07	.06¾	.06¼	.05½
Year	.07½	.05¾	.07	.05¼

Logwood Sticks, Haitian

October 18, 1871, the price was 19 per ton; 1881, $18; 1891, $29; 1901, $15; 1911, $15; 1913, $15; 1918, September, $55.

Per ton

	1927. H.	1927. L.	1928. H.	1928. L.
January	$25.00	$25.00	$24.00	$24.00
February	25.00	25.00	24.00	24.00
March	25.00	25.00	24.00	24.00
April	25.00	25.00	24.00	24.00
May	25.00	25.00	24.00	24.00
June	25.00	24.00	24.00	24.00
July	24.00	24.00	24.00	24.00
August	24.00	24.00	24.00	24.00
September	24.00	24.00	24.00	24.00
October	24.00	24.00	24.00	24.00
November	24.00	24.00	24.00	24.00
December	24.00	24.00	24.00	24.00
Year	25.00	24.00	24.00	24.00

Starch, Corn, Powdered

October 18, 1871, the price was $3 per 100 pounds; 1881, $2.85; 1891, $2.80; 1901, $1.88; 1911, $2.20; 1913, $2.24; 1919, September, $7.25.

Per 100 pounds

	1927. H.	1927. L.	1928. H.	1928. L.
January	$3.42	$3.42	$3.32	$3.07
February	3.42	3.42	3.57	3.32
March	3.42	3.42	3.72	3.57
April	3.42	3.42	4.12	3.82
May	3.07	3.07	4.12	4.12
June	3.07	3.07	4.22	4.12
July	3.07	3.07	4.22	4.22
August	3.07	3.07	4.22	4.07
September	3.07	3.07	4.07	4.07
October	3.07	3.07	4.07	4.07
November	3.07	3.07	4.07	4.07
December	3.07	3.07	4.07	4.07
Year	3.42	3.07	4.22	3.07

Starch, Potato

October 18, 1871, the price was 3¾c. per pound; 1881, 3½c.; 1901, 3¾c.; 1911, 4c.; 1913, 5c.; 1918, April, 15½c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06½	$0.06½	$0.05¾	$0.05¾
February	.06½	.06½	.05¾	.05¾
March	.06½	.06¼	.05¾	.05¾
April	.06¼	.06¼	.05¾	.05¾
May	.06¼	.06¼	.05¾	.05¾
June	.06½	.06¼	.05¾	.05¾
July	.06¼	.06¼	.05¾	.05¾
August	.06¼	.06¼	.05¾	.05¾
September	.06¼	.06	.05¾	.05¾
October	.06½	.06½	.05¾	.05¾
November	.06½	.06½	.05¾	.05¾
December	.05¾	.05¾	.05½	.05½
Year	.06½	.05¾	.05¾	.05½

Sumac, Sicilian, Ground

October 18, 1871, the price was $110 per ton; 1881, $75; 1891, $65; 1901, $48; 1911, $51; 1913, $15; 1919, February, $150.

Per ton

	1927. H.	1927. L.	1928. H.	1928. L.
January	$82.00	$82.00	$62.00	$60.00
February	82.00	75.00	60.00	58.00
March	75.00	74.00	58.00	55.00
April	73.00	70.00	55.00	55.00
May	78.00	73.00	54.00	54.00
June	76.00	72.00	54.00	54.00
July	72.00	72.00	54.00	54.00
August	72.00	70.00	58.00	54.00
September	70.00	70.00	60.00	60.00
October	70.00	62.00	70.00	60.00
November	70.00	62.00	71.00	70.00
December	62.00	62.00	76.00	73.00
Year	82.00	62.00	76.00	54.00

Tapioca Flour

October 18, 1871, the price was 6c. per pound; 1881, 4¼c.; 1891, 4¼c.; 1901, 3c.; 1911, 4¼c.; 1913, 3½c.; 1918, June, 18c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.03½	$0.03½	$0.03½	$0.03½
February	.03½	.03½	.03½	.03¾
March	.03½	.03½	.03¼	.03¼
April	.03½	.03½	.03¼	.03¼
May	.03½	.03½	.03¼	.03¼
June	.03½	.03½	.03¼	.03¼
July	.03½	.03½	.03¼	.03¼
August	.03½	.03½	.03¼	.03¼
September	.03½	.03½	.03¼	.03¼
October	.03½	.03½	.03¼	.03¼
November	.03½	.03½	.03¼	.03¼
December	.03½	.03	.03¾	.03¼
Year	.03½	.03	.03¾	.03¼

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Tanning Materials

Fustic Extract, Solid

October 18, 1871, the price was 14½c. per pound; 1881, 11c.; 1891, 9½c.; 1901, 8¾c.; 1911, 8c.; 1913, 8c.; 1916, January, 55c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.14	$0.14	$0.14	$0.14
February	.14	.14	.14	.14
March	.14	.14	.14	.14
April	.14	.14	.14	.14
May	.14	.14	.14	.14
June	.14	.14	.14	.14
July	.14	.14	.14	.14
August	.14	.14	.14	.14
September	.14	.14	.14	.14
October	.14	.14	.14	.14
November	.14	.14	.14	.14
December	.14	.14	.14	.14
Year	.14	.14	.14	.14

Fustic Extract, Crystals

October 18, 1871, the price was 12½c. per pound; 1881, 11c.; 1891, 9½c.; 1901, 8c.; 1911, 8c.; 1913, 6c.; 1916, January, 60c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.18	$0.18	$0.18	$0.18
February	.18	.18	.18	.18
March	.18	.18	.18	.18
April	.18	.18	.18	.18
May	.18	.18	.18	.18
June	.18	.18	.18	.18
July	.18	.18	.18	.18
August	.18	.18	.18	.18
September	.18	.18	.18	.18
October	.18	.18	.18	.18
November	.18	.18	.18	.18
December	.18	.18	.18	.18
Year	.18	.18	.18	.18

Logwood Extract, Solid

October 18, 1871, the price was 9¼c. per pound; 1881, 8¼c.; 1891, 7¼c.; 1901, 8c.; 1911, 6c.; 1913, 6c.; 1916, January, 90c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.10	$0.10	$0.08	$0.08
February	.10	.09½	.12	.12
March	.09½	.09½	.12	.12
April	.09½	.09½	.12	.12
May	.09½	.09½	.12	.12
June	.09½	.09	.12	.12
July	.09	.09	.12	.12
August	.09	.09	.12	.12
September	.09	.09	.12	.12
October	.09	.08	.12	.12
November	.08	.08	.12	.12
December	.08	.08	.12	.12
Year	.10	.08	.12	.08

Quebracho Extract, Solid

August 16, 1881, the price was 4¼c. per pound; October 18, 1891, 3½c.; 1901, 4⅜c.; 1911, 4⅜c.; 1913, 4⅜c.; 1916, January, 20c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.05⅜	$0.05⅜	$0.05	$0.05
February	.05⅜	.05⅜	.05¼	.05
March	.05⅜	.05⅜	.05¼	.05¼
April	.05⅜	.05⅜	.05¼	.05¼
May	.05⅜	.05⅜	.05¼	.05¼
June	.05⅜	.05⅜	.05¼	.05¼
July	.05⅜	.05⅜	.05¼	.05¼
August	.05⅜	.05⅜	.05¼	.05¼
September	.05⅜	.05⅜	.05¼	.05¼
October	.05⅜	.05	.05¼	.05¼
November	.05	.05	.05¼	.05¼
December	.05	.05	.05¼	.05¼
Year	.05⅜	.05	.05¼	.05

Quercitron, Solid

October 18, 1871, the price was 2c. per pound; 1881, 7c.; 1891, 6½c.; 1901, 3c.; 1911, 2¾c.; 1913, 2¾c.; 1916, January, 30c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.08½	$0.08½	$0.09½	$0.09½
February	.08½	.08½	.09½	.09½
March	.08½	.08½	.09½	.09½
April	.08½	.08½	.09½	.09½
May	.08½	.08½	.09½	.09½
June	.08½	.08½	.09½	.09½
July	.08½	.08½	.09½	.09½
August	.08½	.08½	.09½	.09½
September	.08½	.08½	.09½	.09½
October	.06	.06	.09½	.09½
November	.06	.06	.09½	.09½
December	.06	.06	.09½	.09½
Year	.08½	.06	.09½	.09½

Sumac Extract, Sicilian, Stainless

January 12, 1877, the price was 6c. per pound; October 18, 1881, 5¼c.; 1891, 6½c.; 1901, 7c.; 1911, 6½c.; 1913, 8c.; 1919, May, 16c.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.09¾	$0.09¾	$0.11	$0.11
February	.09¾	.09¾	.10	.10
March	.09¾	.09¾	.10	.10
April	.10½	.09¾	.10	.10
May	.11	.10½	.10	.10
June	.11	.11	.10	.10
July	.11	.11	.10	.10
August	.11	.11	.10	.10
September	.11	.11	.10	.10
October	.11	.11	.10	.10
November	.11	.11	.10	.10
December	.11	.11	.10	.10
Year	.11	.09¾	.11	.10

Coaltar Products Prices

(Continued from page 59)

Tolidin Base

In June, 1918, the price was $3 per pound.

	Per pound— 1927. H.	L.	1928. H.	L.
January	$0.89	$0.89	$0.89	$0.89
February	.89	.89	.89	.86
March	.89	.89	.86	.86
April	.89	.89	.86	.86
May	.89	.89	.86	.86
June	.89	.89	.86	.86
July	.89	.89	.86	.86
August	.89	.89	.86	.86
September	.89	.89	.86	.86
October	.89	.89	.86	.86
November	.89	.89	.86	.86
December	.89	.89	.86	.86
Year	.89	.89	.89	.86

Xylidin

In January, 1918, the price was 90c. per pound.

	Per pound— 1927. H.	L.	1928. H	L.
January	$0.38	$0.38	$0.37	$0.37
February	.38	.38	.37	.37
March	.38	.38	.37	.37
April	.38	.38	.37	.37
May	.38	.38	.37	.37
June	.38	.38	.37	.37
July	.38	.38	.37	.37
August	.38	.38	.37	.37
September	.38	.38	.37	.37
October	.38	.38	.37	.37
November	.38	.38	.37	.37
December	.38	.38	.37	.37
Year	.38	.37	.37	.37

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Drugs and Fine Chemicals: Market Review

Business in drugs and fine chemicals in 1928 was featured by heavy demand toward the end of that year. Due to widespread presence of the influenza, manufacturing consumers were forced to buy merchandise in volume far above the usual quantities. Of course, specialties were mainly called for, but the sales of medicines of special efficacy in fighting the influenza forced the manufacturers thereof to speed up production and to buy a general line of raw materials as well as those specialties more directly and definitely related to treatment of that disease. The result was that the end of the year found chemical houses very busy. Pharmaceutical houses were busier than at any time during the year. And makers of proprietary remedies were swamped with demand for their products. All in all, it was a year of highly satisfactory business. Prices were quite stable most of the period.

Comparative Values

Oil, Paint and Drug Reporter index numbers, based on 100 as the average price for thirty-five drugs and fine chemicals August 1, 1914, ranged as follows by quarters over 1927:—

Jan. 1	April 1.	July 1.	Oct. 1.	Dec. 31.
189.4	188.9	189.2	183.2	183.5

Alcohol Well Stabilized

Alcohol distillers reported excellent business conditions and highly satisfactory volume of sales throughout the entire year. The industry proved to be well stabilized, mainly because of two conditions developed in the preceding year but flowering fully in 1928. These conditions were controlled production and open pricing of merchandise.

Production was regulated by arrangement with the Prohibition Bureau whereby various distilleries operated on an allotment basis. The total production for the country in 1928 was set at 85,000,000 gallons. This production was alloted to the distilleries on a percentage basis reckoned on their proportionate sales in the period before control went into effect. This arrangement proved highly satisfactory as a stabilizing agent in the previous year and was even more appreciated in the period under review. The market here was absolutely swept clear of anything like a surplus supply. This made for stabilization of prices on a basis in line with production costs and productive of a warranted profit. The needs of the country have been arrived at in scientific manner, and 85,000,000 gallons seems to allow for a reasonable expansion in manufacturing requirements.

Elimination of price unsettlement that resulted from controlled production was also furthered by the open price method of quoting. This scheme operated through the alcohol institute, the formal association body through which the industry as a whode endeavored to obtain for itself the best conditions possible with respect to prices, production, and development of legal use of alcohol.

This open price arrangement calls for all members of the institute to register all prices with its secretary and requires that such quotations be prices in fact. Any member may change its quotations as often as it wishes, but it must openly announce its change and then adhere to the schedule as announced.

During the past year this worked to the stabilization of price conditions. It put all producers on the same competitive basis, eliminated all chance for buyers making misleading statements as regarded the prices of competitors, and kept price cutting entirely out of the market so far as producers were concerned. There was some cutting at times in the resale market on the part of some with what seemed to them to be a surplus supply.

Completely denatured No. 5 began the year at 46c. per gallon in tanks and continued thereat until March when the market was set down at 41c., which was low for the year. The advances started in May when the trade made the market 42c. The high point was reached at 46c. per gallon, named in September and continued in effect over the balance of the year. The usual sliding scale of advancing prices started with prices quoted in July and rising 1c. each month to and including the first of September. One special advance of 1c. was made in September in addition to the rise made according to the provisions of the sliding scale.

Another provision, new in 1928, was the zoning system of sales prices established to equalize prices in various parts of the country. The zones established were four in number and each added a definite amount of money to the base prices named at the distilleries and certain cities specified as base points. Zone 1 added 1c. to the base price; zone 2, 2c; zone 3, 3c. and zone 4, 4c. per gallon. All things considered, this scheme worked very well for the industry as a whole.

Another feature of the year in alcohol was the tendency of companies to merge individual units into companies with large capital and reserves. In this respect it was reported that within a comparatively short time it is likely that the production and sale of alcohol will rest in probably not more than two or three companies. To bring this about, several of the present large units must be merged and that is exactly what was slated to be done in 1929.

Methanol Became Scarce

Conditions in the methanol market proved to be more stable than they had been in 1927. The severe competition between natural and synthetic that had featured market conditions in that year no longer was the disturbing element that it had been then. The fact seemed to be that the producers of synthetic sold their entire production easily and left unsatisfied a consuming market that bought natural methanol almost to the total quantity produced. In fact, at times after midyear there was pronounced scarcity of natural methanol and some producers seemed determined to put prices to an advance much more severe than that actually made. Such a development was avoided by the permitting wiser council to prevail. It was determined to keep the price low enough to prevent foreign synthetic from recovering the foothold it once had before synthetic was manufactured in the United States. A new alignment of the makers of crude methanol was also a factor in bringing about more healthy conditions in the market. At one time it appeared as though one important house in the methanol trade would fight rather than co-operate with competitors and independent makers of crude. Fortunately for the trade, better policies were substituted and the trade avoided the chances for disturbing the more satisfactory business conditions that had been reached after years of endeavor.

The price trend in natural methanol was upward most of the year. The opening price in January was 45c per gallon in barrels and declines brought the lowest point for the year in February when sales were made at 40c. By the end of that month 43c. was in effect and that price continued through June. In July, the market was advanced to 44c. and 45c. per gallon. August and September found the market stable at 45c. with supplies growing less and the tendency toward further advance becoming pronounced. The market rose abruptly in October when prices were raised from 45c. to the basis of 55c. per gallon. That figure continued to the end of the year, but there were times when it was hard to obtain deliveries thereat.

Production of crude methanol for eleven months in 1928 totaled 6,587,595 gallons as compared with 7,317,149 gallons produced in the equivalent period, 1927. Production of refined totaled 5,315,111 gallons as against 4,943,185 gallons in 1927. Shipments from the plants—apparent consumption totaled 5,429,124 gallons, while in the eleven-month period of 1927 the total had been 5,217,687 gallons. These figures were provided by the Department of Commerce from data submitted to it by the industry as a whole

Quinine Consent Decree

Quinine provided plenty of action during the year, though the price—that officially named—was unchanged at 40c. per ounce for sulphate. The action took the form of the development of the governments anti-trust suit against the foreign makers of quinine. This action had been started in the courts in the previous year.

The progress of the action led to conferences between representatives of the United States Government and those representing the Dutch producers. These conferences took place in Paris during the summer months and resulted in the Dutch being invited to Washington for a closer contact with the officers of the government in charge of the anti-trust and criminal suits.

The Dutch came under protection of a guarantee of immunity from body attachment under the then existing indictments. At these conferences the case of this government was made clear. From them came a consent decree which the Dutch took back to Holland with them. The decree was laid before their European associates. It was accepted by them susbtantially as written at the Washington conferences and was signed September 20 before Judge Francis A. Winslow in the federal court for the Southern District of New York.

The backbone of this decree took the form of an injunction which perpetually enjoined, restrained and prohibited the defendants from the following:—

(a) Fixing or maintaining resale prices, resale terms, resale discounts, resale allotments of territory or any resale restrictions or conditions whatever with respect to quinine derivatives sold to persons in or held within the United States.

(b) Restraining, preventing or hindering in any way the shipment and/or sale in the United States and/or the shipment or sale to, into or from the United States of cinchona bark and/or quinine derivatives, except as provided in paragraph (f) following.

(c) Participating in any arrangement for the pooling or division of profits or territory with respect to or in consideration of any sales made within the United States.

(d) Discriminating in any way in sales made within the United States between purchasers of quinine derivatives located within the United States when such discriminations are not based on.—

(1) Differences in quantities purchased;

(2) Differences in costs of delivery;

(3) Differences in comeptitive conditions in a particular locality;

(4) Differences in grade or quality.

But no such discrimination shall be made for the purpose of restraining or destroying the trade of any competitor.

(e) Maintaining in force or carrying out within the United States any existing contracts or entering into or carrying out within the United States any new contracts or course of business on the conditions, agreement or understanding that purchasers of cinchona bark and/or quinine derivatives shall purchase such bark and/or quinine derivatives only from the contracting party or parties, or shall not use or deal in the products sold by a competitor.

(f) Provided, however, that nothing herein contained shall be construed to restrain or prohibit any defendant from doing any act or entering into any agreement which is entirely completed outside the United States and which does not require any act or thing to be done within the United States,

Foreign Mercury Cartel

The feature of the mercury market was the formation of a cartel in Europe and establishment of a central selling office through which to move the entire production of Italy and Spain. After a long series of negotiations, the Spanish and Italian quicksilver miners came together in an agreement whereby production of mercury would be controlled and reduced to a quantity through which prices might be maintained at higher and more profitable levels. Furthermore, through control of production it was expected to avoid the periodic glut of stocks that in the past had been the primary cause for wide fluctuations in prices. The international sales office was opened in Lausanne, Switzerland.

Price trend was upward for the greater part of the year in this market. Quotations began at $124 per flask and reached the high for the year in October when spot sales were made at $132.50 per flask. During most of the year the Spanish producers failed to offer. The mines were shut down a month longer than usual, mining operations not being resumed until November. And resumption was then made on a reduced scale.

When the international office began offering at £22 per flask, the market here underwent downward revision. About this time, too, domestic production began to play an intensive part in the development of price trend. It had played an influential part most of the year, also. The result was that spot quotations dropped to $124 per flask in October and were as low as $123 before the end of the year. At that position they began to harden and the market ended the year in rather firm position. Mercurial preparations such as calomel, red precipitate and the like went through the entire year without a change in price.

Bismuth salts underwent few open changes in prices but subcarbonate and subnitrate were two salts subject to such keen competition that it was difficult at any time to be certain as to exactly what prices were being paid. The weakness seemed to be related to the ample production of bismuth metal in this country. Domestic output, or at least the metal sold by distinctly American producing interests was about able to care for all domestic requirements. As an indication of price trend, subnitrate sold for $2.05 per pound in January, was advanced to $2.30 the next month, remained thereat until July when the market broke to $2.05 and was then steadily reduced until the low for the year was reached in December at $1.60.

Cadmium Under Produced

Cadmium metal was strong throughout the twelve months. Spirited demand developed throughout the world, it being reported that the use of the metal in manufacture of electric light filaments had surpassed all previous records. Australia, the leading producer in the world, was unable to cope with requirements. Production in the United States was sold far ahead and in addition to that the buyers here took every pound Canada could produce in the big copper mines in British Columbia. Spot quotations were noted at 67½c. per pound in January and by December 31 they were 80c. per pound with deliveries far behind and production for the future being well sold ahead.

Codliver Oil Strong

Codliver oil was strong most of the year. Production in Norway was the lowest since 1923. This resulted from a decrease in the yield per liver; the number of fish caught was fair. Official production figures for the past seven years follow:—

	Fish.	Oil. Barrels of 30 gls.
1928	63,200,000	43,955
1927	66,800,000	63,357
1926	89,100,000	106,439
1925	60,100,000	88,118
1924	69,900,000	101,451
1923	51,600,000	54,856
1922	47,900,000	69,795

When it became known that production was so far short of that in the previous, as well as in other, years, the tendency in this market was to predict sharply higher prices and to assert that oil would be selling for $50 per barrel ere another fishing season was begun. That prediction was not realized, though the market was advanced. Quotations in January were $36 per barrel, and in March they advanced from that figure to $43 per barrel. High for the year was $44, done in April and May. The market then reacted downward, being $42 during July, August and September. In October it reached $40 and in November, $38 was reported. The range in the final month of the year was $39 to $40 per barrel.

A feature of the year was the spread of consumption in the poultry trade. Special oils, known as "poultry oils," and sometimes being codliver oil, and at others being dogfish oil and mixtures of other vitamin bearing oils, came on the market and found a ready market. This lightened the call for medicinal oil and possibly permitted the market to avoid the predicted figure of $50 per barrel.

Menthol Imports Drop

Menthol passed through its normal round of price developments. Statistically, the market was not viewed as being an especially strong one. Actually, the market in Japan was so well controlled as to partially offset the statistical position. Co-operative efforts among most of the Japanese factors worked to the elimination of normal competition and resulted in prices developing strength at higher positions as the year passed.

A feature of the year was said to be the fact that successful speculation in pyrethrum flowers had supplied some menthol makers with sufficient money to thoroughly control the market in Japan.

Late in the year, the widespread epidemic of influenza caused a tremendous demand for spot goods. At all times during the latter part of the year, shipments of menthol to the United States had been subnormal each month and the result was that when the influenza demand came, the market was illy supplied and hardly able to meet requirements. The result was a very strong undertone in the market.

A modifying element at all times was the presence of synthetic menthol in quantities amply able to meet manufacturing requirements. The price for the domestic synthetic as well as for the German synthetic, which article was especially desirable owing to its lack of toxic qualities, was also far less than the price for natural menthol. Sales volume gained steadily, especially when the Japanese or the New York importers attempted to put the market for natural to a higher level. Also, the fact that sellers of synthetic kept prices stable was counted an element in favor of the continuous expansion in consuming demand.

Many different figures were given concerning the size of the crops in Japan. About the only certain thing was the lessened demand from the United States as evident in the shipments to that country. The following tabulation is suggestive of said curtailment:—

	Cases.
January	468
February	351
March	610
April	85
May	105
June	185
July	45
August	115
*September	85
*October	70

* Incomplete.

The United States normally requires importation of 350 to 400 cases per month, hence the especial importance of the above figures from April on. The stock of crystals to be available in Japan for the crop year was estimated at about 11,000 cases.

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One estimate of the crop, with carryover figures included, obtained from a conservative source, was as follows:—

	Kin Crude Oil.
Carryover (menthol and crude oil)..	250,000
Sambi crop, 3 cuttings.....	200,000
Hokkaido	700,000
Total	1,150,000

This total equals 1,533,000 pounds. The Sambi crops usually yield 50 percent menthol and the Hokkaido runs between 38 and 40 percent. Basing a calculation on 45 percent menthol, average for the two crops, the above figure would indicate a production of 689,850 pounds of menthol, or 11,500 cases.

The following tabulation gives weekly prices for natural and synthetic menthol in this market:—

	Natural.	Synthetic.
January 2	$4.25	$3.25
9	4.25	3.25
16	4.35	3.25
23	4.40	3.25
30	4.30	3.25
February 6	4.30	3.25
13	4.00	3.25
20	4.00	3.25
27	4.10	3.25
March 5	4.10	3.25
12	4.10	3.25
19	4.10	3.25
26	4.10	3.25
April 2	4.05	3.25
9	4.05	3.25
16	4.05	3.25
23	4.05	3.25
30	4.05	3.25
May 7	4.00	3.25
14	3.95	3.25
21	4.10	3.25
28	4.10	3.25
June 4	4.25	3.25
11	4.25	3.25
18	4.25	3.25
25	4.25	3.25
July 2	4.25	3.25
9	4.25	3.25
16	4.40	3.25
23	5.00	3.25
30	5.25	3.25
August 6	5.25	3.25
13	5.00	3.25
20	5.00	3.25
27	5.00	3.25
September 3	5.00	3.25
10	5.00	3.25
17	5.00	3.25
24	5.00	3.25
October 1	5.00	3.25
8	6.00	3.25
15	6.00	3.25
22	6.00	3.25
29	5.90	3.25
November 5	6.00	3.25
12	6.15	3.25
19	6.15	3.25
26	5.90	3.25
December 3	5.75	3.25
10	5.50	3.25
17	5.50	3.25
24	5.50	3.25
31	5.50	3.25

Glycerin Prices Declined

Glycerin was mainly favorable for buyers during the past year. Price trend was mostly downward and conditions were generally suggestive of successful bidding for supply. At times the presence of cheap goods in the hands of resellers was a factor that made for unsettlement of prices insofar as such sellers were willing to cut the regular schedule in most instances. Toward the end of the year conditions were far more stable than they were earlier in the twelvemonth. As the year drew toward a close—practically throughout the last quarter of the year—holders of crude were less inclined to shade prices and they displayed ability to hold supplies rather than dump them on the market at cut figures.

Importations showed a marked decrease from those in the previous year. The figures for eleven months of the calendar year are as follows:—

	Pounds 1928. Crude.	Refined.
January-November	3,991,240	3,261,619
	Pounds 1927. Crude.	Refined.
January-November	14,396,865	7,581,827

Chemically pure glycerin began the year at 18c. to 19c. per pound, according to seller. Declines in the first quarter were steady and by the end of April sales were made at 15c. per pound and the market was soft. However, they became steadier and from then to the end of September the market remained at 15c. In October it advanced to 15½c. and remained thereat for the balance of the year.

Dynamite glycerin sold for 14c. and 15c. in January. In February the market was down to 11¼c. per pound, and to the end of April the market fluctuated between that figure and 12c. per pound. In May, transactions were reported at 12c. and 12½c., most often at the latter figure. The last six months of the year was a period of fair stability, with sales being made between 12¼c. and 12½c. until in October when the market was raised to 13c. In December the market sagged to 12½c.

Soaplye was high at 9¼c., obtained in January, and was low at 7¼c., at which the article sold in March, August and December. In fact, sales from February on were made between 7¼c. and 7¾c. most of the time.

Influenza Booms Business

Influenza seized a strong foothold in most parts of the country during the last two months of the year. It began in the Far West and spread across the country steadily until it hit the Atlantic seaboard heavily. This raised the demand for quinine, aspirin, acetphenetidin, antipyrin, codeine, opium and ipecac, guaiacol carbonate, creosote carbonate, terpin hydrate, acetanilide, and menthol—to mention a few of the articles driven into big volume sales by the epidemic. As the year drew to an end, sellers of these and similar materials reported heavy demand and deliveries that were considerably behind. Everything pointed to the new year opening strong under the influence of continued heavy call for fine chemicals used in the manufacture of products wherewith to fight the flu. Pharmaceutical houses reported business done in December to be by far the largest of any month in 1928 and to be considerably ahead of that done in previous years in December. Prices were strong throughout the entire market and the tendency was upward.

Drugs, Fine Chemicals: Record of Prices

For convenience, the divisions of the mercurial and opium groups are arranged alphabetically under "Mercury" and "Opium," respectively

Acetanilide

In August, 1891, the price was 54c. to 56c.; October 17, 1891, 52c.; 1901, 10c. to 21c.; 1911, 20½c. to 23c.; 1913, 21c. to 22c.; 1918, 80c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.35	$0.35	$0.30	$0.28
February	.35	.35	.28	.26
March	.35	.35	.26	.26
April	.35	.35	.36	.26
May	.35	.35	.36	.36
June	.35	.35	.36	.36
July	.35	.35	.36	.36
August	.35	.35	.36	.36
September	.35	.35	.36	.36
October	.35	.35	.36	.36
November	.30	.30	.36	.36
December	.30	.30	.36	.36
Year	.35	.30	.36	.26

Acetphenetidin

November 14, 1910, the price was 80c. to 85c.; October 17, 1911, 82½c. to 85c.; 1913, 84c. to 85c.; 1917, February, $25.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.60	$1.60	$1.40	$1.40
February	1.60	1.60	1.40	1.40
March	1.60	1.60	1.40	1.40
April	1.60	1.60	1.40	1.40
May	1.60	1.60	1.40	1.40
June	1.60	1.60	1.40	1.40
July	1.60	1.60	1.40	1.40
August	1.60	1.40	1.40	1.40
September	1.40	1.40	1.40	1.40
October	1.40	1.40	1.40	1.20
November	1.40	1.40	1.20	1.20
December	1.40	1.40	1.20	1.20
Year	1.60	1.40	1.40	1.20

Alcohol

October 18, 1871, the price of ethyl was $1.87½ to $1.90; 1881, ethyl, $2.18 to $2.20; 1891, $2.30 to $2.32; 1901, ethyl, $2.51 to $2.53; wood, 95 percent, 60c.; 1911, ethyl, $2.56 to $2.58; methyl, 95 percent, 50c. to 52c.; denatured, 40c. to 42c.; 1913, ethyl, $2.50 to $2.52; methyl, 46c. to 47c.; denatured, 35c. to 38c.; ethyl, 1917, October, $5.60; methyl, 1920, $3.25; denatured, 1920, May, $1.11.

1927

	Barrels. Ethyl 188 proof. H.	Barrels. Ethyl 188 proof. L.	Barrels. Methanol 95% H.	Barrels. Methanol 95% L.	Tanks. Denatured No. 5. H.	Tanks. Denatured No. 5. L.
Jan.	$3.75	$3.75	$0.80	$0.80	$0.33	$0.31
Feb.	3.75	3.75	.80	.80	.31	.27
Mar.	3.75	3.75	.80	.80	.29	.26
April	3.75	3.75	.80	.80	.37½	.37½
May	3.75	3.25	.80	.80	.40	.37½
June	3.75	3.75	.63	.63	.41	.41
July	3.75	3.75	.63	.63	.42	.42
Aug.	3.75	3.75	.63	.50	.43	.43
Sept.	3.75	3.75	.50	.50	.46	.44
Oct.	3.75	3.75	.50	.45	.46	.46
Nov.	3.75	3.75	.45	.45	.46	.46
Dec.	3.75	3.75	.45	.45	.46	.46
Year	3.75	3.75	.80	.45	.46	.26

1928

	Barrels. Ethyl 188 proof. H.	Barrels. Ethyl 188 proof. L.	Barrels. Methanol 95% H.	Barrels. Methanol 95% L.	Tanks. Denatured No. 5. H.	Tanks. Denatured No. 5. L.
Jan.	$2.70½	$2.70½	$0.45	$0.45	$0.46	$0.46
Feb.	2.70½	2.70½	.43	.40	.46	.46
Mar.	2.70½	2.65½	.43	.43	.46	.41
April	2.65½	2.65½	.43	.43	.41	.41
May	2.66½	2.65½	.43	.43	.42	.41
June	2.67½	2.60½	.43	.43	.42	.42
July	2.67½	2.67½	.45	.44	.43	.43
Aug.	2.68½	2.68½	.45	.45	.44	.44
Sept.	2.69½	2.64	.45	.45	.45	.45
Oct.	2.67	2.66	.55	.45	.46	.45
Nov.	2.67	2.67	.55	.55	.46	.46
Dec.	2.67	2.67	.55	.55	.46	.46
Year	2.70½	2.64	.55	.40	.46	.41

Twenty-four Years' Prices: Methanol 95%

	Per gallon H.	Per gallon L.
1928	$0.55	$0.40
1927	.80	.45
1926	.80	.58
1925	.68	.68
1924	.88	.68
1923	1.13	.88
1922	1.13	.50
1921	1.65	.57
1920	3.25	1.52
1919	1.35	.90½
1918	1.52	1.17
1917	1.35	.90
1916	.90	.55
1915	.55	.45
1914	.45	.45
1913	.50	.45
1912	.50	.49
1911	.50	.50
1910	.50	.50
1909	.50	.50
1908	.51	.39
1907	.40	.40
1906	.70	.40
1905	.70	.60

Acetylsalicylic Acid, Powdered (Aspirin)

March 10, 1917, the price was $3.50.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.85	$0.85	$0.85	$0.85
February	.85	.85	.85	.85
March	.85	.85	.85	.85
April	.85	.85	.85	.85
May	.85	.85	.85	.85
June	.85	.85	.85	.85
July	.85	.85	.85	.85
August	.85	.85	.85	.85
September	.85	.85	.85	.85
October	.85	.85	.85	.85
November	.85	.85	.85	.85
December	.85	.85	.85	.85
Year	.85	.85	.85	.85

Bismuth Subnitrate, Powdered

May 6, 1875, the price was $2; October 18, 1881, $1.85; 1891, $1.90; 1901, $1.40 to $1.45; 1911, $1.80 to $1.85; 1913, $1.80 to $1.85; 1918, April, $6.20.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$2.70	$2.60	$2.05	$2.05
February	2.60	2.60	2.30	2.30
March	2.60	2.50	2.30	2.30
April	2.20	2.20	2.30	2.30
May	2.20	2.20	2.30	2.30
June	2.20	2.05	2.30	2.30
July	2.05	2.05	2.30	2.05
August	2.05	2.05	2.05	2.05
September	2.05	2.05	2.05	2.05
October	2.05	2.05	2.05	1.80
November	2.05	2.05	1.80	1.60
December	2.05	2.05	1.60	1.60
Year	2.70	2.05	2.30	1.60

Borax, Powdered

On October 18, 1871, the price was 32c. to 33c.; 1881, 12½c. to 13¼c.; 1891, 8¾c. to 8⅞c.; 1901, 7¼c. to 7½c.; 1911, 3½c. to 3¾c.; 1913, 3¾c. to 4c.; 1920, January, 8½c.

1927

	Sacks. H.	Sacks. L.	Barrels. H.	Barrels. L.
January	$0.04	$0.04	$0.04¼	$0.04¼
February	.04	.04	.04¼	.04¼
March	.04	.04	.04¼	.04¼
April	.04	.04	.04¼	.04¼
May	.04	.04	.04¼	.04¼
June	.04	.04	.04¼	.04¼
July	.04	.04	.04¼	.04¼
August	.04	.04	.04¼	.04¼
September	.04	.04	.04¼	.04¼
October	.03¾	.03¾	.04	.04
November	.03¾	.03¾	.04	.04
December	.03¾	.03¾	.04	.04
Year	.04	.03¾	.04¼	.04

1928

	Sacks. H.	Sacks. L.	Barrels. H.	Barrels. L.
January	$0.03¾	$0.03¾	$0.04	$0.04
February	.03¾	.03¾	.04	.04
March	.03¾	.03¾	.04	.04
April	.03¾	.03¾	.04	.04
May	.03¾	.03¾	.04	.04
June	.03¾	.02½	.04	.03¼
July	.02½	.02½	.03½	.02¾
August	.02½	.02½	.02¾	.02¾
September	.02½	.02½	.02¾	.02¾
October	.02½	.02½	.02¾	.02¾
November	.02½	.02½	.02¾	.02¾
December	.02½	.02½	.02¾	.02¾
Year	.03¾	.02½	.04	.02¾

Bromides

June 5, 1872, the price of ammonium was $1.90 to $1.95; potassium, May 29, 1872, $1.20 to $1.30; sodium, $3.50 to $3.60; October 18, 1881, ammonium, 42c.; potassium, 29c. to 30c.; sodium, 42c.; 1891, ammonium, 36c.; potassium, 24c. to 26c.; sodium, 36c.; 1901, ammonium, 55c.; potassium, 46c. to 47c.; sodium, 51c.; 1911, ammonium, 41c. to 42c.; potassium, 31c. to 34c.; sodium, 37c. to 38c.; 1913, ammonium, 49c. to 50c.; potassium, 39c. to 40c.; sodium, 45c. to 46c.; ammonium, 1917, January, $1; potassium, 1917, November, $1.45; sodium, 1920, June, 85c.

1927

	Per pound, granular. Ammonium. H.	Ammonium. L.	Potassium. H.	Potassium. L.	Sodium. H.	Sodium. L.
January	$0.50	$0.48	$0.42	$0.41	$0.42	$0.42
February	.51	.50	.41	.41	.42	.42
March	.51	.51	.41	.41	.42	.42
April	.51	.51	.41	.41	.42	.42
May	.51	.51	.41	.41	.42	.42
June	.48	.48	.42	.42	.42	.42
July	.48	.48	.42	.42	.42	.42
August	.48	.48	.42	.42	.42	.42
September	.48	.48	.42	.42	.42	.42
October	.48	.48	.42	.42	.42	.42
November	.48	.48	.42	.42	.42	.42
December	.48	.48	.42	.42	.42	.42
Year	.51	.48	.42	.41	.42	.42

1928

	Per pound, granular. Ammonium. H.	Ammonium. L.	Potassium. H.	Potassium. L.	Sodium. H.	Sodium. L.
January	$0.48	$0.48	$0.42	$0.42	$0.42	$0.42
February	.48	.48	.42	.42	.42	.42
March	.48	.48	.42	.42	.42	.42
April	.48	.48	.42	.42	.42	.42
May	.48	.48	.42	.42	.42	.42
June	.48	.48	.42	.42	.42	.42
July	.47¾	.47	.42	.42	.42	.42
August	.47	.47	.42	.42	.42	.42
September	.47	.47	.42	.42	.42	.42
October	.47	.47	.42	.42	.42	.42
November	.47	.47	.42	.42	.42	.42
December	.47	.47	.42	.42	.42	.42
Year	.48	.47	.42	.42	.42	.42

Camphor, Monobromated

November 4, 1907, the price was $1.40 to $1.50; October 18, 1911, 95c. to $1.05; 1913, $1 to $1.10; 1919, December, $5.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.85	$1.85	$1.85	$1.85
February	1.85	1.85	1.85	1.85
March	1.85	1.85	1.85	1.85
April	1.85	1.85	1.85	1.85
May	1.85	1.85	1.85	1.85
June	1.85	1.85	1.85	1.85
July	1.85	1.85	1.85	1.85
August	1.85	1.85	1.85	1.85
September	1.85	1.85	1.85	1.85
October	1.85	1.85	1.85	18.5
November	1.85	1.85	1.85	1.85
December	1.85	1.85	1.85	1.85
Year	1.85	1.85	1.85	1.85

Caffeine, Alkaloid

August 20, 1894, the price was $3 to $3.10; October 18, 1901, $3.75 to $4; 1911, $3.15 to $3.25; 1913, $3.40 to $3.50; 1918, April, $13.50.

	Per ounce 1927. H.	1927. L.	1928. H.	1928. L.
January	$3.25	$3.25	$3.05	$2.90
February	3.25	3.25	2.90	2.90
March	3.25	3.25	2.90	2.90
April	3.25	3.25	2.90	2.90
May	3.25	3.05	2.90	2.90
June	3.05	3.05	2.90	2.80
July	3.05	3.05	2.80	2.80
August	3.05	3.05	2.80	2.80
September	3.05	3.05	2.80	2.80
October	3.05	3.05	2.80	2.80
November	3.05	3.05	2.80	2.80
December	3.05	3.05	2.80	2.80
Year	3.25	3.05	3.05	2.80

Cantharides, Chinese

October, 1871, the price was $1.60; 1881, 90c. to 95c.; 1891, 95c.; 1901, 61c. to 65c.; 1911, 18c. to 20c.; 1913, 45c. to 50c.; 1920, January, $1.40.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.74	$0.74	$0.60	$0.60
February	.74	.74	.60	.60
March	.74	.74	.60	.60
April	.74	.74	.60	.60
May	.74	.74	.60	.45
June	.74	.74	.50	.50
July	.74	.74	.50	.50
August	.74	.74	.50	.50
September	.74	.74	.50	.50
October	.60	.60	.50	.50
November	.60	.60	.50	.50
December	.60	.60	.50	.50
Year	.74	.60	.60	.45

Castor Oil, Medicinal

October 18, 1871, the price was 18c. to 19c.; 1881, 14½c.; 1891, 12c.; 1901, 12c.; 1911, 10¼c.; 1913, 9¾c. to 9½c.; 1918, August, 30c.

	Per pound 1927. Drums. H.	Drums. L.	1928. Drums. H.	Drums. L.
January	$0.13½	$0.13	$0.13½	$0.13½
February	.13½	.13½	.13½	.13½
March	.14	.14	.13½	.13½
April	.14	.14	.13½	.13½
May	.13½	.13½	.13½	.13½
June	.13	.13	.13½	.13½
July	.12½	.12½	.13½	.13
August	.12½	.12½	.13	.13
September	.13	.12½	.12½	.12½
October	.13	.13	.13	.13
November	.13	.13	.13	.13
December	.13½	.13	.13	.13
Year	.14	.12½	.13½	.12½

Chloral Hydrate

February 25, 1874, the price was $1.90; October 18, 1881, $1.35 to $1.80; 1891, $1.05 to $1.15; 1901, 95c. to $1; 1911, 74c. to 76c.; 1913, 61c. to 64c.; 1918, April, $2.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.60	$0.60	$0.75	$0.75
February	.60	.60	.75	.75
March	.75	.60	.75	.75
April	.75	.75	.75	.75
May	.75	.75	.75	.75
June	.75	.75	.75	.75
July	.75	.75	.75	.75
August	.75	.75	.75	.75
September	.75	.75	.75	.75
October	.75	.75	.75	.75
November	.75	.75	.75	.75
December	.75	.75	.75	.75
Year	.75	.60	.75	.75

Chloroform, U.S.P.

February 25, 1874, the price was $1.05; October 18, 1881, 65c.; 1891, 50c. to 55c.; 1901, 45c. to 55c.; 1911, 25c. to 33c.; 1913, 25c. to 30c.; 1917, November, 70c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.30	$0.30	$0.30	$0.30
February	.30	.30	.30	.30
March	.30	.30	.30	.30
April	.30	.30	.30	.30
May	.30	.30	.30	.30
June	.30	.30	.30	.30
July	.30	.30	.30	.30
August	.30	.30	.30	.30
September	.30	.30	.30	.30
October	.30	.30	.30	.30
November	.30	.30	.30	.30
December	.30	.30	.30	.30
Year	.30	.30	.30	.30

Citrate, Potash

May 29, 1872, the price was $1 to $1.05; October 18, 1881, 60c.; 1891, 50c.; 1901, 33c.; 1911, 38c.; 1913, 48c.; 1919, January, $2.02.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.53	$0.53	$0.53	$0.53
February	.53	.53	.53	.51
March	.53	.53	.51	.51
April	.53	.53	.51	.51
May	.53	.53	.51	.51
June	.53	.53	.51	.51
July	.53	.53	.51	.51
August	.53	.53	.51	.51
September	.53	.53	.51	.51
October	.53	.53	.51	.51
November	.53	.53	.51	.51
December	.53	.53	.51	.51
Year	.53	.53	.53	.51

Cocaine Hydrochloride, Granular

August 10, 1891, the price was $6.50 to $7; October 18, 1901, $5.50 to $5.55; 1911, $3.25 to $3.55; 1913, $3.35 to $3.60; 1918, June, $11.25.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$8.00	$8.00	$8.50	$8.50
February	8.00	8.00	8.50	8.50
March	8.00	8.00	8.50	8.50
April	8.00	8.00	8.50	8.50
May	8.00	8.00	8.50	8.50
June	8.00	8.00	8.50	8.50
July	8.00	8.00	8.50	8.50
August	8.00	8.00	8.50	8.50
September	8.00	8.00	8.50	8.50
October	8.00	8.00	8.50	8.50
November	8.50	8.00	8.50	8.50
December	8.50	8.50	8.50	8.50
Year	8.50	8.00	8.50	8.50

Cocoa Butter

April 2, 1879, the price was 37½c.; October 8, 1881, 50c.; 1891, 32c. to 42c.; 1901, 34½c. to 35½c.; 1911, 45c. to 48c.; 1913, 36c. to 39c.; bulk, 1919, March, 52c.; fingers, 1919, September, 52c.

1927

	Per pound—Bulk. H.	Bulk. L.	Wrapped fingers in 12-lb. boxes. H.	Wrapped fingers in 12-lb. boxes. L.
January	$0.43½	$0.33	$0.50	$0.40
February	.44	.43½	.50	.49
March	.43½	.43½	.49	.49
April	.43½	.43½	.50	.49
May	.43½	.42	.50	.49
June	.42	.42	.49	.47
July	.42	.42	.49	.47
August	.44	.42	.50	.49
September	.44	.44	.50	.50
October	.44	.42	.50	.48
November	.40	.40	.48	.48
December	.40	.40	.48	.48
Year	.44	.33	.50	.48

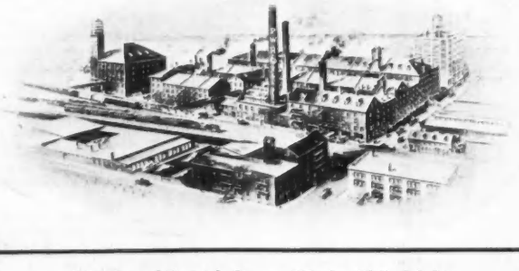
MERCK'S
Standard Chemicals

Medicinal Analytical Photographic Technical

Acetanilid
Acid Carbolic
Acid Citric and Citrates
Bismuth Salts
Bromides
Caffeine
Carbon Tetrachloride
Chloral Hydrate
Chloroform
Chromic Acid and Chromates
Chromium Carbonate
Chromium Sulphate
Cinchonidine and Salts
Cocaine and Salts
Codeine and Salts
Dionin
Ether
Formin (Hexamethylenamine)
Gold Chloride and other Gold Salts
Homatropine
Hydroquinone
Iodides
Iron Salts for photo and blue printing
Lanum (Adeps Lanae)
Magnesium Oxide
Magnesium Sulphate
Mercurials
Milk Sugar
Morphine and Salts
Potassa Sulphurated
Potassium Acetate
Quinine and Salts
Salicylates
ACID ACETYLSALICYLIC
ACID SALICYLIC
METHYL SALICYLATE
SODIUM SALICYLATE
SALOL
MINOR SALICYLATES
Silver Nitrate and other Silver Salts
Sodium Sulphate
Sodium Sulphide, White
Strychnine and Salts
Sulphocarbolates
Zinc Acetate
Zinc Stearate

MERCK & CO.
INC.
MANUFACTURING CHEMISTS
SUCCESSORS TO
POWERS-WEIGHTMAN-ROSENGARTEN CO.
Philadelphia New York **RAHWAY, N. J.** St. Louis Montreal

Main Office and Works at Rahway, N. J.



Ninth and Parrish Streets Works, Philadelphia

1928

	Per pound—Bulk. H.	Bulk. L.	Wrapped fingers in 12-lb. boxes. H.	L.
January	$0.40	$0.40	$0.48	$0.46
February	.40	.33½	.46	.46
March	.33½	.33½	.46	.46
April	.33½	.33½	.46	.42
May	.36	.33½	.42½	.42
June	.36	.33¼	.43	.42½
July	.33¼	.33¼	.43	.43
August	.33¼	.33¼	.43	.43
September	.29½	.29¼	.40	.40
October	.29½	.29¼	.40	.40
November	.29¼	.29¼	.40	.40
December	.29½	.29¼	.40	.40
Year	.40	.29½	.48	.40

Codliver Oil, Norwegian

In September, 1872, the price was $60; October 18, 1881, $36 to $45; 1891, $23.50 to $32; 1901, $21.50 to $25; 1911, $35 to $37; 1913, $24.50 to $25; 1916, April, $150.

	Per barrel—1927. H.	1927. L.	1928. H.	1928. L.
January	$29.00	$28.50	$36.00	$36.00
February	29.00	29.00	36.00	36.00
March	29.00	29.00	43.00	36.00
April	31.50	29.00	44.00	43.00
May	45.00	35.00	44.00	44.00
June	44.50	43.00	42.00	40.00
July	45.00	44.00	42.00	42.00
August	44.00	43.00	42.00	42.00
September	44.00	42.00	42.00	42.00
October	42.00	40.00	42.00	40.00
November	40.00	40.00	40.00	38.00
December	40.00	36.00	40.00	39.00
Year	45.00	28.50	44.00	36.00

Corn Syrup, 42 Degrees

February 25, 1874, the price was $9; October 18, 1881, $4 to $4.75; 1891, $2.90 to $3.25; 1901, $1.65; 1911, $2.33; 1913, $2.31; 1917, August, $6.39.

	Per 100 pounds—1927. H.	1927. L.	1928. H.	1928. L.
January	$3.31	$3.31	$3.41	$3.16
February	3.31	3.31	3.66	3.41
March	3.31	3.31	3.81	3.66
April	3.31	3.31	4.21	3.91
May	3.31	3.31	4.21	4.21
June	3.31	3.31	4.26	4.21
July	3.31	3.31	4.26	4.26
August	3.31	3.31	4.26	4.11
September	3.31	3.31	4.11	4.11
October	3.31	3.16	4.11	4.11
November	3.16	3.16	4.11	4.11
December	3.16	3.16	4.11	4.11
Year	3.31	3.16	4.26	3.16

Coumarin

August 20, 1894, the price was $17 to $25; October 18, 1901, $4.40 to $4.50; 1911, $3.10 to $3.25; 1913, $3.10 to $3.24; 1918, June, $32.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$3.60	$3.60	$3.60	$3.60
February	3.60	3.60	3.60	3.60
March	3.60	3.60	3.60	3.60
April	3.60	3.60	3.60	3.60
May	3.60	3.60	3.60	3.60
June	3.60	3.60	3.60	3.60
July	3.60	3.60	3.60	3.60
August	3.60	3.60	3.60	3.60
September	3.60	3.60	3.60	3.60
October	3.60	3.60	3.60	3.60
November	3.60	3.60	3.60	3.60
December	3.60	3.60	3.60	3.60
Year	3.60	3.60	3.60	3.60

Cream of Tartar, Powder

October 18, 1871, the price was 30½c.; 1881, 32c. to 33c.; 1891, 23c. to 23½c.; 1901, 9c. to 9¾c.; 1911, 23¾c. to 24c.; 1913, 24¾c. to 25c.; 1918, July, 68½c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.22	$0.20½	$0.26¾	$0.26¾
February	.22½	.22	.26¾	.26¾
March	.23	.22½	.26¾	.26¾
April	.23¾	.23¾	.26¾	.26¾
May	.25½	.23¾	.26¾	.26¾
June	.27¾	.26½	.26¾	.26¾
July	.27¾	.27¾	.26¾	.26¾
August	.27½	.27½	.27½	.26¾
September	.27¾	.27¾	.27¾	.27½
October	.27¾	.26¾	.27¾	.27¾
November	.26¾	.26¾	.27¾	.27¾
December	.26¾	.26¾	.27¾	.27¾
Year	.27¾	.20½	.27¾	.26¾

Epsom Salt, U.S.P.

October 18, 1871, the price was $3; 1881, $1.50; 1891, $1.10; 1901, $1.25; 1911, 90c.; 1913, $1.50; 1917, June, $4.37½.

	Per 100 pounds Car lots, bags. 1927. H.	1927. L.	1928. H.	1928. L.
January	$1.90	$1.90	$2.15	$2.15
February	1.90	1.90	2.15	2.15
March	1.90	1.90	2.15	2.15
April	1.90	1.90	2.15	2.15
May	1.90	1.90	2.15	2.15
June	1.90	1.90	2.15	2.15
July	1.90	1.90	2.15	2.15
August	1.90	1.90	2.15	2.16
September	1.90	1.90	2.15	2.15
October	1.90	1.90	2.15	2.15
November	2.15	1.90	2.15	2.15
December	2.15	2.15	2.15	2.15
Year	2.15	1.90	2.15	2.15

Formaldehyde

April 11, 1898, the price was 19c. to 20c.; October 18, 1901, 16c. to 17c.; 1911, 8½c. to 9¼c.; 1913, 8½c. to 9½c.; 1920, March, 85c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11¼	$0.11¼	$0.08½	$0.08½
February	.11¼	.11¼	.08½	.08½
March	.11¼	.11¼	.08½	.08½
April	.11¼	.11¼	.08½	.08
May	.11¼	.11¼	.08	.08
June	.11¼	.09½	.08	.07½
July	.11¼	.09½	.08	.07½
August	.09½	.09½	.08½	.08½
September	.09½	.09½	.08½	.08½
October	.08½	.08½	.09½	.08½
November	.08½	.08½	.09½	.09½
December	.08½	.08½	.09½	.09½
Year	.11¼	.08½	.09½	.07½

Glycerin, C.P.

May 20, 1872, the price was 58c. to 80c.; October 18, 1881, 86c. to 95c.; 1891, 15c. to 18c.; 1901, 14½c. to 14¾c.; 1911, 20c.; 1913, 21c.; 1917, October, 70c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.30	$0.30	$0.19	$0.18
February	.30	.27	.17½	.16½
March	.27	.26	.16½	.15½
April	.26	.26	.15½	.15
May	.26	.25½	.15	.15
June	.25½	.25	.15	.15
July	.24½	.24	.15	.15
August	.24	.24	.15	.15
September	.24	.24	.15	.15
October	.23½	.23	.15½	.15
November	.22½	.21	.15½	.15½
December	.20¾	.20	.15½	.15½
Year	.30		.19	.15

Seventeen Years' Prices

	Per pound—H.	L.
1928	$0.19	$0.15
1927	.30	.20
1926	.30	.23
1925	.25	.19
1924	.19	.16½
1923	.18½	.16
1922	.18½	.14¾
1921	.20	.14
1920	.28½	.20
1919	.24	.20
1918	.68	.52
1917	.70	.52
1916	.60	.36½
1915	.65	.19¼
1914	.27	.19¾
1913	.21	.18¾
1912	.20	.16

Glycerin, Dynamite

December 30, 1895, the price was 14¾c. to 15c.; October 18, 1901, 13c. to 13¼c.; 1911, 16¼c. to 16½c.; 1913, 19¾c. to 20c.; 1917, October, 70c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.27	$0.25½	$0.15	$0.14
February	.25½	.24	.12	.11¼
March	.24	.22½	.12	.11¼
April	.24	.22½	.12	.11½
May	.24	.23½	.12½	.12
June	.23	.21½	.12½	.12½
July	.21½	.21	.12½	.12½
August	.21	.20½	.12¼	.12¼
September	.20½	.19¾	.12½	.12¼
October	.19¼	.18	.13	.12½
November	.17	.16	.13	.13
December	.16	.15½	.13	.12½
Year	.27	.15½	.15	.11¼

Glycerin, Soaplye

August 1, 1904, the price was 9¼c. to 9¾c.; October 18, 1911, 12½c. to 13c.; 1913, 14¼c. to 14½c.; 1917, October, 51c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.18¼	$0.17½	$0.09¼	$0.09
February	.17½	.17	.08¾	.07¾
March	.17	.16	.07¼	.07¼
April	.16¼	.16	.07¾	.07¼
May	.16¼	.16	.07¾	.07¾
June	.15½	.14½	.07¾	.07¾
July	.14½	.13¾	.07¾	.07¾
August	.13¾	.13¼	.07¾	.07¼
September	.13½	.13¼	.07½	.07½
October	.12¾	.11½	.07½	.07½
November	.11	.10	.07¼	.07¼
December	.10	.09¾	.07½	.07¼
Year	.18¼	.09¾	.09¼	.07¼

Haarlem Oil, Domestic

May 29, 1872, the price of foreign oil was $3.50 to $3.60; October 18, 1901, foreign, $2 to $2.10; 1911, foreign, $1.85 to $2; 1913, foreign, $2; 1918, domestic, $8.50.

	Per gross bottles—1927. H.	1927. L.	1928. H.	1928. L.
January	$3.25	$3.15	$3.25	$3.25
February	3.25	3.25	3.25	3.25
March	3.25	3.25	3.25	3.25
April	3.25	3.25	3.25	3.25
May	3.25	3.25	3.25	3.25
June	3.25	3.25	3.25	3.25
July	3.25	3.25	3.25	3.25
August	3.25	3.25	3.25	3.25
September	3.25	3.25	3.25	3.25
October	3.25	3.25	3.25	3.25
November	3.25	3.25	3.25	3.25
December	3.25	3.25	3.25	3.25
Year	3.25	3.15	3.25	3.25

Hypophosphites

August 20, 1894, the price of lime potash and soda was $1.02½ to $1.10; October 18, 1901, lime, 58c. to 70c.; potash, 58c. to 70c.; soda, 58c. to 70c.; 1911, lime, 60c. to 64c.; potash, 65c. to 69c.; soda, 65c. to 69c.; 1913, lime, 54c. to 58c.; potash, 59c. to 63c.; soda, 59c. to 63c.; 1918, lime, August, $1; potash, 1917, August, $2.15¼; soda, 1917, $1.10.

1927

	Per pound—Lime. H.	Lime. L.	Potash. H.	Potash. L.	Soda. H.	Soda. L.
January	$0.60	$0.60	$0.80	$0.80	$0.70	$0.70
February	.60	.60	.80	.80	.70	.70
March	.60	.60	.80	.80	.70	.70
April	.60	.60	.80	.80	.70	.70
May	.60	.60	.80	.80	.70	.70
June	.60	.60	.80	.80	.70	.70
July	.60	.60	.80	.80	.70	.70
August	.60	.60	.80	.80	.70	.70
September	.60	.60	.80	.80	.70	.70
October	.60	.60	.80	.80	.70	.70
November	.60	.60	.80	.80	.70	.70
December	.60	.60	.80	.80	.70	.70
Year	.60	.60	.80	.80	.70	.70

1928

	Per pound—Lime. H.	Lime. L.	Potash. H.	Potash. L.	Soda. H.	Soda. L.
January	$0.60	$0.60	$0.80	$0.80	$0.70	$0.70
February	.60	.60	.80	.80	.70	.70
March	.60	.60	.80	.80	.70	.70
April	.60	.60	.80	.80	.70	.70
May	.60	.60	.80	.80	.70	.70
June	.60	.60	.80	.80	.70	.70
July	.60	.60	.80	.80	.70	.70
August	.60	.60	.80	.80	.70	.70
September	.60	.60	.80	.80	.70	.70
October	.60	.60	.80	.80	.70	.70
November	.60	.60	.80	.80	.70	.70
December	.60	.60	.80	.80	.70	.70
Year	.60	.60	.80	.80	.70	.70

Iodide, Potash

May 29, 1872, the price was $9; October 18, 1881, $2.10; 1891, $2.59 to $2.63; 1901, $2.05 to $2.10; 1911, $2.10 to $2.15; 1913, $2.95 to $3; 1917, November, $3.75.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$3.75	$3.65	$3.50	$3.50
February	3.65	3.65	3.50	3.50
March	3.65	3.65	3.50	3.50
April	3.50	3.50	3.50	3.50
May	3.50	3.50	3.50	3.50
June	3.50	3.50	3.65	3.65
July	3.50	3.50	3.65	3.65
August	3.50	3.50	3.75	3.65
September	3.50	3.50	3.75	3.75
October	3.50	3.50	3.75	3.75
November	3.50	3.50	3.50	3.50
December	3.50	3.50	3.50	3.50
Year	3.75	3.50	3.75	3.50

Iodine, Resublimed

May 29, 1872, the price was $11; October 18, 1881, $3.25, 1891, $3.30 to $3.35; 1901, $2.70 to $2.75; 1911, $2.60 to $2.65; 1913, $3.55 to $3.60; 1919, August, $4.50.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$4.65	$4.65	$4.65	$4.65
February	4.65	4.65	4.65	4.65
March	4.65	4.65	4.65	4.65
April	4.65	4.65	4.65	4.65
May	4.65	4.65	4.65	4.65
June	4.65	4.65	4.65	4.65
July	4.65	4.65	4.65	4.65
August	4.65	4.65	4.65	4.65
September	4.65	4.65	4.65	4.65
October	4.65	4.65	4.65	4.65
November	4.65	4.65	4.65	4.65
December	4.65	4.65	4.65	4.65
Year	4.65	4.65	4.65	4.65

Magnesia Carbonate, U.S.P.

May 29, 1872, the price was 20c. to 32c.; October 18, 1881, 18c. to 19c.; 1911, 5¼c. to 6¾c.; 1913, 5½c. to 6c.; 1918, April, 25c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.09½	$0.45	$0.45
February	.09½	.09½	.40	.40
March	.09½	.09½	.40	.40
April	.09½	.09½	.40	.40
May	.09½	.09½	.40	.40
June	.09½	.09½	.40	.40
July	.09½	.09½	.40	.40
August	.09½	.09½	.40	.40
September	.09½	.09¼	.40	.40
October	.08½	.08½	.40	.40
November	.08½	.08½	.40	.40
December	.08½	.08½	.40	.40
Year	.09½	.08½	.45	.40

Menthol, Imported

April 23, 1884, the price was $8.50; October 18, 1891, $2.40 to $3.50; 1901, $4.25 to $4.50; 1911, $6; 1913, $4.10 to $4.25; 1920, January, $14.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$4.75	$4.50	$4.35	$4.25
February	4.60	4.40	4.30	4.00
March	4.60	4.60	4.10	4.10
April	4.60	4.40	4.05	4.05
May	4.30	4.25	4.10	4.00
June	4.25	4.25	4.25	4.25
July	4.35	4.30	5.00	4.25
August	4.25	4.15	5.25	5.00
September	4.20	4.10	5.00	5.00
October	4.10	4.00	6.00	5.00
November	4.10	3.95	6.15	5.90
December	4.25	4.05	5.50	5.25
Year	4.75	3.95	6.15	4.00

Thirty-four Years' Prices

	Per pound—H.	L.
1928	$6.15	$4.00
1927	4.75	3.95
1926	7.00	4.30
1925	12.75	7.50
1924	14.25	10.75
1923	19.50	7.75
1922	10.50	5.25
1921	5.25	3.75
1920	14.00	4.00
1919	7.40	3.15
1918	7.40	3.15
1917	3.50	2.85
1916	3.40	2.75
1915	3.50	2.50
1914	4.75	2.85
1913	10.25	2.70
1912	14.00	6.00
1911	7.00	3.45
1910	3.45	2.05
1909	2.75	2.05
1908	2.15	1.85
1907	2.60	1.90
1906	2.90	2.15
1905	3.00	1.75
1904	6.25	2.50
1903	8.00	5.25
1902	7.00	3.80
1901	4.75	3.50
1900	3.90	2.35
1899	3.00	1.20
1898	2.60	2.00
1897	4.20	1.85
1896	4.75	2.50
1895	4.75	4.50

Mercury and Derivatives

Quicksilver (Mercury)

October 18, 1871, the price was $63; 1881, $34; 1891, $46.50 to $48; 1901, $49.88 to $51; 1911, $47.25; 1913, $40.50; 1917, February, $140.

	Per flask of 76 pounds—1927. H.	1927. L.	1928. H.	1928. L.
January	$101.50	$100.00	$125.00	$124.00
February	102.50	101.50	123.00	122.00
March	115.00	102.50	123.00	120.00
April	125.00	117.00	124.50	123.00
May	125.00	122.00	124.50	123.50
June	122.00	116.00	125.00	123.00
July	122.00	120.50	122.50	121.00
August	121.00	120.00	127.00	121.00
September	120.00	120.00	130.00	128.00
October	127.00	121.50	132.50	124.00
November	128.50	128.00	124.00	124.00
December	128.00	126.00	124.00	123.00
Year	128.50	100.00	132.50	120.00

Calomel

June 5, 1872, the price was $1 to $1.35; October 18, 1881, 60c. to 95c.; 1891, 78c. to $1.10; 1901, 86c. to $1.10; 1911, 94c. to $1.10; 1913, 69c. to $1.02½; 1918, July, $2.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$1.59	$1.59	$2.05	$2.05
February	1.66	1.59	2.05	2.05
March	1.79	1.66	2.05	2.05
April	1.96	1.79	2.05	2.05
May	1.96	1.96	2.05	2.05
June	1.96	1.96	2.05	2.05
July	1.96	1.96	2.05	2.05
August	1.96	1.96	2.05	2.05
September	1.96	1.96	2.05	2.05
October	2.05	1.96	2.05	2.05
November	2.05	2.05	2.05	2.05
December	2.05	2.05	2.05	2.05
Year	2.05	1.59	2.05	2.06

Mercury Bisulphate

November 9, 1903, the price was 55c. to 57c.; October 18, 1911, 68c. to 70c.; 1913, 43c. to 47c.; 1918, July, $1.58.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$1.25	$1.25	$1.63	$1.63
February	1.30	1.25	1.63	1.63
March	1.41	1.30	1.63	1.63
April	1.56	1.41	1.63	1.63
May	1.56	1.56	1.63	1.63
June	1.56	1.56	1.63	1.63
July	1.56	1.56	1.63	1.63
August	1.56	1.56	1.63	1.63
September	1.56	1.56	1.63	1.63
October	1.63	1.56	1.63	1.63
November	1.63	1.63	1.63	1.63
December	1.63	1.63	1.63	1.63
Year	1.63	1.25	1.63	1.63

Red Precipitate

November 22, 1871, the price was $1 to $1.05; October 21, 1885, 70c.; 1891, 91c. to 94c.; 1901, 96c. to 98c.; 1911, $1.04 to $1.14; 1913, 79c. to 86c.; 1918, July, $2.19.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$1.70	$1.70	$2.16	$2.16
February	1.77	1.70	2.16	2.16
March	1.90	1.77	2.16	2.16
April	2.07	1.90	2.16	2.16
May	2.07	2.07	2.16	2.16
June	2.07	2.07	2.16	2.16
July	2.07	2.07	2.16	2.16
August	2.07	2.07	2.16	2.16
September	2.07	2.07	2.16	2.16
October	2.16	2.07	2.16	2.16
November	2.16	2.16	2.16	2.16
December	2.16	2.16	2.16	2.16
Year	2.16	1.70	2.16	2.16

White Precipitate

August 1, 1877, the price was 90c.; October 21, 1885, 75c.; 1891, 96c. to $1; 1901, $1.01 to $1.03; 1911, $1.09 to $1.14; 1913, 84c. to 89c.; 1918, July, $2.29.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$1.85	$1.85	$2.24	$2.24
February	1.85	1.85	2.24	2.24
March	1.98	1.85	2.24	2.24
April	2.15	1.98	2.24	2.24
May	2.15	2.15	2.24	2.24
June	2.15	2.15	2.24	2.24
July	2.15	2.15	2.24	2.24
August	2.15	2.15	2.24	2.24
September	2.15	2.15	2.24	2.24
October	2.24	2.15	2.24	2.24
November	2.24	2.24	2.24	2.24
December	2.24	2.24	2.24	2.24
Year	2.24	1.85	2.24	2.24

Blue Mass, U.S.P.

June 5, 1872, the price was $1 to $1.10; March 2, 1886, 33c. to 34c.; October 18, 1901, 41c. to 42c.; 1911, 46c. to 48c.; 1913, 42c. to 44c.; 1918, July, 95c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.79	$0.79	$1.02	$1.02
February	.79	.79	1.02	1.02
March	.86	.79	1.02	1.02
April	.97	.86	1.02	1.02
May	.97	.97	1.02	1.02
June	.97	.97	1.02	1.02
July	.97	.97	1.02	1.02
August	.97	.97	1.02	1.02
September	.97	.97	1.02	1.02
October	1.02	.97	1.02	1.02
November	1.02	1.02	1.02	1.02
December	1.02	1.02	1.02	1.02
Year	1.02	.79	1.02	1.02

Mercurial Ointment, 33 1/3 Percent

August 1, 1877, the price was 40c. to 50c.; October 21, 1907, 30c. to 32c.; 1911, 42c. to 44c.; 1913, 38c. to 40c.; 1918, July, 93c.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$0.79	$0.79	$0.94	$0.94
February	.79	.79	.94	.94
March	.84	.79	.94	.94
April	.90	.84	.94	.94
May	.90	.90	.94	.94
June	.90	.90	.94	.94
July	.90	.90	.94	.94
August	.90	.90	.94	.94
September	.90	.90	.94	.94
October	.94	.90	.94	.94
November	.94	.94	.94	.94
December	.94	.94	.94	.94
Year	.94	.79	.94	.94

Mercurial Ointment, 50 Percent

October 21, 1907, the price was 40c. to 42c.; 1911, 52c. to 54c.; 1913, 48c. to 50c.; 1918, July, $1.30.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$1.04	$1.04	$1.28	$1.28
February	1.04	1.04	1.28	1.28
March	1.11	1.04	1.28	1.28
April	1.22	1.11	1.28	1.28
May	1.22	1.22	1.28	1.28
June	1.22	1.22	1.28	1.28
July	1.22	1.22	1.28	1.28
August	1.22	1.22	1.28	1.28
September	1.22	1.22	1.28	1.28
October	1.28	1.22	1.28	1.28
November	1.28	1.28	1.28	1.28
December	1.28	1.28	1.28	1.28
Year	1.28	1.04	1.28	1.28

Opium and Derivatives

Opium Gum

October 18, 1871, the price was $4; 1881, $3 to $3.12; 1891, $1.80 to $1.90; 1901, $3.12 to $3.19; 1911, $8; 1913, $5.75 to $5.90; 1917, May, $30.

	Per pound—1927. H.	1927. L.	1928. H.	1928. L.
January	$12.00	$12.00	$12.00	$12.00
February	12.00	12.00	12.00	12.00
March	12.00	12.00	12.00	12.00
April	12.00	12.00	12.00	12.00
May	12.00	12.00	12.00	12.00
June	12.00	12.00	12.00	12.00
July	12.00	12.00	12.00	12.00
August	12.00	12.00	12.00	12.00
September	12.00	12.00	12.00	12.00
October	12.00	12.00	12.00	12.00
November	12.00	12.00	12.00	12.00
December	12.00	12.00	12.00	12.00
Year	12.00	12.00	12.00	12.00

Crops and Prices Since 1870

The following table shows the opium crops and the high and low prices for cases on spot since 1870:—

Year.	Crop, cases.	Prices H.	Prices L.
1928	....	$12.00	$12.00
1927	....	12.00	12.00
1926	3,150	12.00	12.00
1925	3,500	12.00	12.00
1924	2,500	12.00	18.00
1923	2,200	8.00	6.75
1922	1,100	6.75	5.50
1921	1,500	7.50	5.50
1920	....	7.50	6.25
1919	....	22.50	3.75
1918	....	30.00	21.50
1917	....	90.00	19.50
1916	....	13.50	10.75
1915	7,500	11.00	8.90
1914	7,500	10.00	6.00
1913	8,500	6.60	5.60
1912	6,500	8.50	6.00
1911	10,500	8.50	4.70
1910	4,800	6.00	4.80
1909	4,800	6.00	4.00
1908	4,650	5.75	4.05
1907	3,000	7.00	3.45
1906	7,500	3.50	2.72½
1905	3,700	3.30	2.72½
1904	11,200	2.95	2.62½
1903	3,200	3.50	2.70
1902	10,000	3.05	2.70
1901	5,600	3.45	3.00
1900	8,200	3.45	3.00
1899	6,400	3.37½	2.80
1898	3,000	3.75	2.70
1897	7,000	2.80	1.95
1896	3,600	2.40	1.90
1895	7,500	2.30	1.60
1894	4,500	3.25	1.85
1893	2,845	3.15	1.77½
1892	7,500	1.90	1.50
1891	7,400	2.25	1.75
1890	5,300	3.85	2.00
1889	5,500	3.40	2.82½
1888	8,700	3.37½	2.65
1887	7,800	4.60	3.25
1886	7,500	3.25	2.80
1885	7,000	3.90	3.30
1884	5,000	4.10	3.50
1883	6,500	4.12½	3.50
1882	5,500	4.50	3.87½
1881	10,000	6.25	3.90
1880	2,000	7.75	4.87½
1879	4,000	5.25	4.35
1878	5,500	4.70	4.25
1877	9,500	6.70	4.75
1876	3,280	6.60	4.75
1875	6,489	7.75	5.00
1874	2,300	9.00	5.00
1873	3,200	7.90	5.95
1872	4,500	7.90	6.10
1871	7,961	6.00	4.90
1870	4,273	9.40	5.25

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Opium, Granular or Powdered

November 22, 1871, the price was $7.40 to $7.50; October 18, 1881, $5.50; 1891, $2.80 to $2.85; 1901, $4 to $4.10; 1911, $8.65 to $8.75; 1913, $7.35 to $7.40; 1917, April, $33.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$13.00	$13.00	$13.00	$13.00
February	13.00	13.00	13.00	13.00
March	13.00	13.00	13.00	13.00
April	13.00	13.00	13.00	13.00
May	13.00	13.00	13.00	13.00
June	13.00	13.00	13.00	13.00
July	13.00	13.00	13.00	13.00
August	13.00	13.00	13.00	13.00
September	13.00	13.00	13.00	13.00
October	13.00	13.00	13.00	13.00
November	13.00	13.00	13.00	13.00
December	13.00	13.00	13.00	13.00
Year	13.00	13.00	13.00	13.00

Codeine Sulphate

December 20, 1897, the price was $3.95; October 18, 1901, $4.20 to $4.50; 1911, $5.40 to $5.55; 1913, $5 to $5.15; 1917, February, $11.

	Per ounce			
	1927.		1928.	
	H.	L.	H.	L.
January	$7.75	$7.75	$8.75	$8.75
February	7.75	7.75	8.75	8.75
March	7.75	7.75	8.75	8.75
April	7.75	7.75	8.75	8.75
May	7.75	7.75	8.75	8.75
June	7.75	7.75	8.75	8.75
July	7.75	7.75	8.75	8.25
August	7.75	7.75	8.25	8.25
September	8.75	7.75	8.25	8.25
October	8.75	8.75	8.25	8.25
November	8.75	8.75	8.25	8.25
December	8.75	8.75	8.25	8.25
Year	8.75	7.75	8.75	8.25

Morphine Sulphate

October 18, 1871, the price was $4.80; 1881, $3.65 to $3.75; 1891, $1.80 to $2.10; 1901, $1.70 to $1.85; 1911, $4.20 to $4.30; 1913, $4.20 to $4.30; 1917, October, $13.80.

	Per ounce			
	1927.		1928.	
	H.	L.	H.	L.
January	$7.25	$7.25	$8.25	$8.25
February	7.25	7.25	8.25	8.25
March	7.25	7.25	8.25	8.25
April	7.25	7.25	8.25	8.25
May	7.25	7.25	8.25	8.25
June	7.25	7.25	8.25	8.25
July	7.25	7.25	8.25	7.75
August	7.25	7.25	7.75	7.75
September	8.25	7.25	7.75	7.75
October	8.25	8.25	7.75	7.75
November	8.25	8.25	7.75	7.75
December	8.25	8.25	8.25	7.75
Year	8.25	7.25	8.25	7.75

Potassiuim Permanganate, U.S.P.

October 18, 1901, the price was 9c. to 11c.; 1911, 9¾c. to 10¾c.; 1913, 9¾c. to 10c.; 1917, July, $4.10.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.14½	$0.14	$0.15	$0.15
February	.14	.14	.15	.15
March	.14	.14	.15	.15
April	.14	.14	.15	.15
May	.14	.14	.15	.15
June	.14½	.14½	.15	.15
July	.14½	.14½	.15	.15
August	.14½	.14½	.15	.15
September	.14½	.14½	.15	.15
October	.15	.14½	.15	.15
November	.15	.15	.15	.15
December	.15	.15	.16	.15
Year	.15	.14	.16	.15

Quinine Sulphate, American

October 18, 1871, the price was $2.50; 1881, $1.85 to $1.90; 1891, 24c. to 25c.; 1901, 28c.; 1911, 14c.; 1913, 23c. to 28c.; 1918, May, 90c.

(Manufacturers' Prices)

	Per ounce			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.40	$0.40	$0.40	$0.40
February	.40	.40	.40	.40
March	.40	.40	.40	.40
April	.40	.40	.40	.40
May	.40	.40	.40	.40
June	.40	.40	.40	.40
July	.40	.40	.40	.40
August	.40	.40	.40	.40
September	.40	.40	.40	.40
October	.40	.40	.40	.40
November	.40	.40	.40	.40
December	.40	.40	.40	.40
Year	.40	.40	.40	.40

Forty-two Years' Prices

	Per ounce	
	H.	L.
1928	$0.40	$0.40
1927	.40	.40
1926	.50	.40
1925	.50	.50
1924	.50	.50
1923	.50	.50
1922	.60	.50
1921	.70	.60
1920	.90	.70
1919	.90	.80
1918	.90	.75
1917	.75	.55
1916	.75	.50
1915	.75	.26
1914	.31	.26
1913	.26	.19½
1912	.19½	.14
1911	.14	.14
1910	.14	.14
1909	.15	.14
1908	.16	.15
1907	.22	.16
1906	.19	.14½
1905	.23	.19
1904	.27	.21
1903	.28	.23
1902	.28	.20
1901	.34	.27
1900	.37	.29
1899	.40	.21
1898	.25	.18
1897	.30	.15
1896	.27	.17½
1895	.28	.25
1894	.27½	.25½
1893	.25	.20
1892	.24	.20
1891	.30	.24
1890	.37	.32
1889	.40	.32
1888	.49	.40
1887	.61	.35
1886	.73	.49

Note.—Prices for bulk quinine salts based on sulphate for the years cited.

Rochelle Salt

October 18, 1881, the price was 25c.; 1891, 25c.; 1901, 16½c. to 17¾c.; 1911, 19c. to 19½c.; 1913, 18c. to 18½c.; 1918, August, 46½c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.20	$0.20	$0.23	$0.23
February	.20	.20	.23	.23
March	.20	.20	.23	.23
April	.21	.21	.23	.23
May	.22	.21	.23	.23
June	.23	.22	.23	.23
July	.23	.23	.23	.23
August	.23	.23	.23	.23
September	.23	.23	.23	.23
October	.23	.23	.23	.23
November	.23	.23	.23	.23
December	.23	.23	.23	.23
Year	.23	.20	.23	.23

Saccharin, Soluble

December 11, 1905, the price was $1.50 to $1.75; October 18, 1911, $1.25 to $1.50; 1913, $1.25 to $1.50; 1917, August, $42.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.75	$1.75	$1.70	$1.70
February	1.75	1.75	1.70	1.70
March	1.75	1.75	1.70	1.70
April	1.75	1.75	1.70	1.70
May	1.75	1.75	1.70	1.70
June	1.75	1.75	1.70	1.70
July	1.75	1.75	1.70	1.70
August	1.75	1.75	1.70	1.70
September	1.75	1.75	1.70	1.70
October	1.75	1.75	1.70	1.70
November	1.75	1.75	1.70	1.70
December	1.75	1.75	1.70	1.70
Year	1.75	1.75	1.70	1.70

Salol

August 20, 1894, the price was $3.05 to $3.10; October 18, 1901, $1.25 to $1.50; 1911, 85c. to 90c.; 1913, 55c. to 57½c.; 1917, January, $2.50.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.90	$0.90	$0.90	$0.90
February	.90	.90	.90	.90
March	.90	.90	.90	.90
April	.90	.90	.90	.90
May	.90	.90	.90	.90
June	.90	.90	.90	.90
July	.90	.90	.90	.90
August	.90	.90	.90	.90
September	.90	.90	.90	.90
October	.90	.90	.90	.90
November	.90	.90	.90	.90
December	.90	.90	.90	.90
Year	.90	.90	.90	.90

Santonin, Crystals

May 29, 1872, the price was $11 to $12; October 18, 1901, $5.25 to $5.50; 1911, $14.40 to $14.65; 1913, $26 to $26.50; 1920, May, $175.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$130.00	$130.00	$130.00	$130.00
February	130.00	130.00	130.00	130.00
March	130.00	130.00	130.00	130.00
April	130.00	130.00	130.00	130.00
May	130.00	130.00	130.00	130.00
June	130.00	130.00	130.00	130.00
July	130.00	130.00	130.00	130.00
August	130.00	130.00	130.00	130.00
September	130.00	130.00	130.00	130.00
October	130.00	130.00	130.00	130.00
November	130.00	130.00	130.00	130.00
December	130.00	130.00	130.00	130.00
Year	130.00	130.00	130.00	130.00

Seidlitz Mixture

July 14, 1875, the price was 27c. to 28c.; October 18, 1881, 23c.; 1891, 20c.; 1901, 13½c. to 14½c.; 1911, 15½c. to 16c.; 1913, 14½c. to 15c.; 1918, August, 36c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.16¼	$0.16¼	$0.18½	$0.18½
February	.16¼	.16¼	.18½	.18½
March	.16¼	.16¼	.18½	.18½
April	.17	.17	.18½	.18½
May	.17	.17¾	.18½	.18½
June	.18½	.17¾	.18½	.18½
July	.18½	.18½	.18½	.18½
August	.18½	.18½	.18½	.18½
September	.18½	.18½	.18½	.18½
October	.18½	.18½	.18½	.18½
November	.18½	.18½	.18½	.18½
December	.18½	.18½	.18½	.18½
Year	.18½	.16¼	.18½	.18½

Sodium Benzoate

On October 18, 1901, the price was 44c. to 46c.; 1911, 26c. to 28c.; 1913, 23¾c. to 24c.; 1917, January, $8.75.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.50	$0.50	$0.50	$0.50
February	.50	.50	.50	.50
March	.50	.50	.50	.50
April	.50	.50	.50	.50
May	.50	.50	.50	.50
June	.50	.50	.50	.50
July	.50	.50	.50	.50
August	.50	.50	.50	.50
September	.'0	.50	.50	.50
October	.50	.50	.50	.50
November	.50	.50	.50	.50
December	.50	.50	.50	.50
Year	.50	.50	.50	.50

Strychnine Alkaloid, Crystals

May 29, 1872, the price was $2.75 to $3; October 18, 1901, $1.05 to $1.15; 1901, 55c. to 80c.; 1911, 55c. to 60c.; 1913, 50c. to 60c.; 1920, April, $1.95.

	Per ounce			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.56	$0.56	$0.56	$0.56
February	.56	.56	.56	.56
March	.56	.56	.56	.56
April	.56	.56	.56	.56
May	.56	.56	.56	.56
June	.56	.56	.56	.56
July	.56	.56	.66	.56
August	.56	.56	.66	.66
September	.56	.56	.66	.66
October	.56	.56	.66	.66
November	.56	.56	.66	.66
December	.56	.56	.66	.66
Year	.56	.56	.66	.56

Tartar Emetic, Technical, Crystals

May 29, 1872, the price was $1; October 18, 1911, 23¼c. to 25c.; 1913, 22½c. to 23c.; 1917, November, 67c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.29	$0.29	$0.30¾	$0.28¾
February	.29	.29	.28¾	.28¾
March	.29	.29	.28¾	.28¾
April	.29	.29	.28¾	.28¾
May	.30¾	.29	.28¾	.27¼
June	.30¾	.30¾	.27¼	.27¼
July	.30¾	.30¾	.27¼	.27¼
August	.30¾	.30¾	.27¼	.27¼
September	.30¾	.30¾	.27¼	.27¼
October	.30¾	.30¾	.27¼	.27¼
November	.30¾	.30¾	.27¼	.27¼
December	.30¾	.30¾	.27¼	.27¼
Year	.30¾	.29	.30¾	.27¼

Thymol

January 20, 1896, the price was $2; October 18, 1901, $3.15 to $3.25; 1911, $1.25 to $1.35; 1913, $1.65 to $1.70; 1917, November, $17.50.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.75	$2.70	$2.75	$2.60
February	2.95	2.70	2.75	2.75
March	2.95	2.95	2.75	2.65
April	2.95	2.95	2.65	2.65
May	2.95	2.75	2.65	2.50
June	2.75	2.75	2.50	2.50
July	2.75	2.75	2.50	2.50
August	2.70	2.70	2.50	2.50
September	2.65	2.65	2.50	2.50
October	2.65	2.65	2.50	2.40
November	2.65	2.60	2.40	2.25
December	2.60	2.60	2.25	2.25
Year	2.95	2.60	2.75	2.25

Vanillin

October 19, 1890, the price was $3.75 to $4; 1901, 70c. to $1; 1911, 33c. to 36c.; 1913, 33c. to 36c.; 1918, August, 90c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$7.20	$7.20	$6.75	$6.75
February	7.20	7.20	6.75	6.75
March	7.20	7.20	6.75	6.75
April	7.20	7.20	6.75	6.75
May	7.20	7.20	6.75	6.75
June	7.20	7.20	6.75	6.75
July	7.20	7.20	6.75	6.75
August	7.20	7.20	6.75	6.25
September	7.20	6.75	6.25	6.25
October	6.75	6.75	6.25	6.25
November	6.75	6.75	6.25	6.25
December	6.75	6.75	6.25	6.25
Year	7.20	6.75	6.75	6.25

Druggists' Preparations Output Gains in 1927

According to data collected at the 1927 biennial census of manufactures, establishments engaged primarily in the manufacture of druggists' preparations reported products valued at $110,309,139, an increase of 15.6 percent as compared with $95,419,824 for 1925, the last preceding census year. In addition, druggists' preparations are made to a considerable extent by establishments classified in the "Patent medicines and compounds," "Perfumery, cosmetics and toilet preparations," and other industries. The value of druggists' preparations thus made outside the industry proper in 1927 was $20,807,152. Among the principal items making up the total production in that year, reported by establishments both in the "Druggists' preparations" industry and in other industries, are the following:—Alkaloids and derivatives, $6,907,719; biological products, $18,065,347; other druggists' preparations (not including patent or proprietary medicines), $79,416,669.

The establishments in this industry are engaged primarily in the manufacture of serums, vaccines and toxins, capsules (filled or empty), tablets, pills, pepsin, tinctures, medicinal plasters, cough sirups, ointments and other pharmaceuticals.

Of the 373 establishments reporting for 1927, 74 were located in New York, 39 in Pennsylvania, 31 in Illinois, 24 in Ohio, 23 in Missouri, 19 in Massachusetts, 15 in Kansas, 15 in New Jersey, 11 in Indiana, 11 in Iowa, 10 in Michigan, 10 in Nebraska, and the remaining 91 in 26 other States and the District of Columbia. In 1925 the industry was represented by 370 establishments, the increase to 373 in 1927 being the net result of gains and losses. Of the establishments gained, part manufactured commodities other than druggists' preparations as their principal products in 1925 and the remainder reported for the first time at the present census. Of the establishments lost, some were idle throughout the year, some went out of business prior to 1927 and others reported commodities other than druggists' preparations as their principal products and were therefore transferred to the appropriate industries.

Detailed figures follow:—

	1927.	1925.
Number of establishments	373	370
*Wage earners (average for the year)	10,138	9,685
Wages	$11,942,469	$11,078,384
Cost of materials, supplies, containers for products, fuel, and purchased power, total	$40,599,392	$36,063,719
Materials, supplies and containers	$39,970,330	†
Fuel and power	$629,062	†
Products, total value	$110,309,139	$95,419,824
Druggists' preparations	$83,582,583	$67,111,168
Other products	$26,726,556	$28,308,656
Value added by manufacture	$69,709,747	$59,356,105
Horsepower	15,919	12,553

* Not including salaried employes.
† Not reported separately.

Production by Kind and Value

	1927.	1925.
Druggists' preparations, total value	$104,389,735	$80,920,675
Made in "Druggists' preparations" industry	83,582,583	67,111,168
Made in "Patent medicines and compounds" and "Perfumery, cosmetics and toilet preparations" industries	14,126,454	7,456,893
Secondary products of other industries	6,680,698	6,352,614
*Alkaloids and derivatives	6,907,719	6,336,778
†Biological products, total	18,065,347	10,621,933
Antitoxins, for human use	2,104,967	
for animal use	675,268	2,573,728
Bacterians, for human use	1,349,229	
for animal use	955,072	766,052
Serums, for human use	1,619,767	
for animal use	7,906,346	2,951,450
Vaccines, for human use	1,487,074	
for animal use	515,904	1,335,184
Viruses, for human use	399,951	
for animal use	471,843	864,338
Undistributed (not reported by kind), for human use	423,913	
for animal use	66,013	2,131,172
Other druggists' preparations (not patent or proprietary), total	79,416,669	63,961,964
Tinctures, fluid extracts, medicinal sirups and other liquid preparations, not elsewhere classified, and synthetic preparations	38,374,561	30,232,355
Pills, tablets, powders, etc., not elsewhere classified	38,557,697	32,553,416
Pharmaceutical metals and their salts	2,484,411	1,176,193

* Chiefly caffeine, cocaine, codein, morphine, nicotine, quinine and strychnine.
† Not including gland products.

Gelatin Output to Jan. 1

The production of edible gelatin during the fourth quarter of 1928, as reported to the Department of Commerce, amounted to 5,027,000 pounds, as compared with a production of 4,652,100 pounds in the fourth quarter of 1927. The total production during 1928 was 17,069,600 pounds, as against 17,548,000 pounds in 1927, a decrease of 2.7 percent.

Stocks on hand at the end of the year amounted to 8,425,300 pounds, representing increases of 15.7 percent and 7.4 percent, respectively, as compared with 7,283,600 pounds at the end of the preceding quarter and 7,845,100 pounds at the end of the fourth quarter of 1927.

The statistics are based on the reports of 12 companies or firms, operating 13 plants, located in Illinois, Massachusetts, Michigan, New Jersey, New York, and Wisconsin.

The following statement shows the production for each quarter of the past four years, together with the stocks on hand at the end of each quarter:—

	Pounds	
	Production.	Stocks at end of quarter.
1928, Total	17,069,600	....
Fourth quarter	5,027,000	8,425,300
Third quarter	1,824,200	7,283,600
Second quarter	4,755,000	9,088,000
First quarter	5,463,400	9,138,000
1927, Total	17,548,400	....
Fourth quarter	4,652,100	7,845,100
Third quarter	2,497,100	7,296,600
Second quarter	5,054,500	9,277,100
First quarter	5,344,300	9,265,200
1926, Total	15,473,200	....
Fourth quarter	4,541,000	8,420,800
Third quarter	2,401,200	7,191,000
Second quarter	3,893,900	8,882,000
First quarter	4,637,100	10,103,800
1925, Total	12,535,100	....
Fourth quarter	4,008,700	8,989,900
Third quarter	1,440,000	7,145,900
Second quarter	2,828,600	8,930,700
First quarter	4,257,800	11,271,000

Acid Prices

(Continued from page 56)

Phosphoric, 50 Percent, Technical

(In carboys)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.08½	$0.08½	$0.08½	$0.08½
February	.08½	.08½	.08½	.08½
March	.08½	.08½	.08½	.08½
April	.08½	.08½	.08½	.08½
May	.08½	.08½	.08½	.08½
June	.08½	.08½	.08½	.08½
July	.08½	.08½	.08½	.08½
August	.08½	.08½	.08½	.08½
September	.08½	.08½	.08½	.08½
October	.08½	.08½	.08½	.08½
November	.08½	.08½	.08½	.08½
December	.08½	.08½	.08½	.08½
Year	.08½	.08½	.08½	.08½

Sulphuric, 60 Degrees

(In tanks)

	Per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$10.50	$10.50	$11.00	$11.00
February	10.50	10.50	11.00	11.00
March	10.50	10.50	11.00	11.00
April	10.50	10.50	11.00	11.00
May	10.50	10.50	11.00	11.00
June	10.50	10.50	11.00	11.00
July	10.50	10.50	11.00	11.00
August	10.50	10.50	11.00	11.00
September	10.50	10.50	11.00	11.00
October	11.00	10.50	11.00	11.00
November	11.00	11.00	11.00	11.00
December	11.00	11.00	11.00	11.00
Year	11.00	10.50	11.00	11.00

Tartaric, Crystals

October 18, 1871, the price was 50c. per pound; 1881, 42c.; 1891, 33c.; 1901, 28c.; 1911, 30¼c.; 1913, 31¼c.; 1919, April, 88c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	**$0.27¾**	**$0.27¼**	**$0.36**	**$0.35**
February	.31½	.27¾	.35	.35
March	.32	.31½	.37	.36
April	.34	.33	.38	.37
May	.35	.34	.38	.38
June	.37	.35	.38	.38
July	.37	.37	.38	.38
August	.37	.37	.38	.38
September	.37	.36	.38	.38
October	.37	.36	.38½	.38
November	.36	.36	.38½	.38½
December	.36	.36	.38¾	.38¾
Year	**.37**	**.27¼**	**.38½**	**.35**

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Botanical Drugs: Market Review

Sales of botanical drugs in 1928 reached a volume showing a satisfactory increase over those in the previous year. The gains in business booked prevailed in both foreign and domestic merchandise. Furthermore, profits were said to be more satisfactory. Less unsettlement and disturbance of normal market trends was noted. Values developed clear cut movements that in almost every instance were directly related to supply and demand. In rare instances speculation had a part; it was always a minor part, however.

The feature of foreign markets was the generally unsatisfactory crops throughout the European collection and cultivation districts. Weather conditions opposed the growth of a normal output of botanical merchandise and the result was marked scarcity of a number of items before the fall business set in. Therefore, it might be said that most severe advances in values was due solely to inadequate supplies. Domestic crops turned out to be of fair size and were gathered under labor conditions more propitious than had ruled in recent years. Prices paid were fairly low and that served to keep selling prices favorable to consumers in most instances.

Price changes each quarter of 1928, 1927 and 1926 compare as follows:—

	First quarter		
	1928.	1927.	1926.
Advances	239	243	201
Reductions	183	230	336
Totals	422	473	537
	Second quarter		
	1928.	1927.	1926.
Advances	160	161	179
Reductions	265	324	302
Totals	425	485	481
	Third quarter		
	1928.	1927.	1926.
Advances	187	221	178
Reductions	238	243	258
Totals	425	464	436
	Fourth quarter		
	1928.	1927.	1926.
Advances	205	219	242
Reductions	225	267	228
Totals	430	486	470
	Whole year		
	1928.	1927.	1926.
Advances	791	844	800
Reductions	911	1,064	1,124
Totals	1,702	1,908	1,783

Comparative Values

Oil, Paint & Drug Reporter index-numbers, based on 100 as the average price for forty botanical drugs (twenty domestic and twenty foreign), August 1, 1924, ranged as follows by quarters over 1928:

Jan. 1.	April 1.	July 1.	Oct. 1.	Dec. 31.
130	134.4	127	123.8	120.3

Balsams

Price trend in Para copaiba balsam was downward most of the year. The high price of 48c. per pound prevailed in February and the low one of 31c. came in the last month of the year. The trend in South American was in line with that in Para. The high for the year was 50c. per pound, ruling in January, and the low was 33c. that came in November and continued to the end of the year. Business was fair in volume most of the time, but adequate supply tended to make both articles competitive to a somewhat unusual degree.

Canadian balsam fir was a steady article most of the year. Movement of stocks to the spot was ample and scarcity was rarely felt. Quotations prevailed at $13 per gallon during the first quarter. In April, $12.50 prevailed and in May the market was $12 per gallon. Prices remained thereat for the balance of the year. Oregon balsam moved similarly. The year began at $1.50 per gallon, reached $1.45 in March, dropped abruptly to $1 in April, and remained thereat for the balance of the year.

Peru showed more strength than usual. The price trend was upward and due to conservative replacements made at a rising cost in the primary market the market lacked all evidence of weakness most of the time. Quotations were noted at $1.65 per pound for the first four months of the year. In May, $1.75 per pound was done and from then to November fluctuations were between that figure and $1.72½ per pound. In the latter month $1.70 prevailed and that price was effective December 31.

Tolu showed more than ordinary movement in prices. At times the market was lightly stocked, giving prices a basis close to being very strong. Quotations were noted at $1 per pound until toward the end of March when quotations became 93c. That was the market in April and May. In June, quotations were down to 90c., but in July reaction brought the market to $1 per pound. That was the market until November when prices rose to $1.05 per pound and in December the high point for the year was reached at $1.10.

Barks

Stability was the keynote to this group. Prices varied within narrow limits most of the year and were about evenly divided between advances and declines.

Black haw bark of root was in fair demand most of the twelvemonth. Prices were firm at the beginning of the year, sales recording many times a well-maintained market at 29c. per pound. February was a good month and orders went through at 30c. per pound. March was stable under fair request. April caught the market in a more competitive mood and quotations were shaded 2c. to the basis of 28c. The competition was short lived, as sellers immediately stabilized that price and kept it effective until August. In the latter month the new crop position was discounted somewhat and quotations came down to 26c. September found demand broader and 27c. prevailed, to be followed by 28c. in the last month of the year.

Cinchona was unchanged and highly stable as to demand throughout the year. Cascara also showed little change. Production had been scaled so close to actual needs that the usual speculative aspects of the market were lacking. Prices ranged from 13½c. per pound in January and February to 13c., which ruled from late February over the balance of the year.

Condurango sold readily throughout the year at 13c. or 14c. per pound most of the time. Toward the end of the year a stronger undertone was induced by broader trading and a rise in replacement costs. The market was 15c. per pound for the greater part of the last month of the year.

Cottonroot was firm. Beginning the year at 12c. per pound, it was advanced to 13c. in February. That figure remained in effect until April, when 12c. developed, to be followed by 11½c. in June. The market was unchanged until August, when it came back to 13c. per pound. The advance was resumed in October and 14½c. per pound became the market. No further change came for the balance of the year.

Demand for elm bark was brisk early in the year. Prices reflected the excellence of sales volume. Selected bark in bundles sold for 24c. in January and during February 25c. was lowest. The advance continued with business done at 26c. in March and April. Slight irregularity of trend was noted in May, June and July, but the low point then was 23c. per pound. From August through October the market freshened and prices were most often 25c. per pound. The last month of the year found the market prices at the low for the year—23c.

Lemon peel was stable at 9½c. per pound until sudden scarcity put prices to the basis of 11c. per pound in September. The market remained thereat until late December when quotations returned to 9½c. Orange peel was in steady and about normal demand for the entire year. Quotations ranged from 9c. low in January to 11½c. high in April and May. The trend was downward for the balance of the year, but the reductions came in fractions and made 10c. or 10½c. the market in September and October. The balance of the year found prices steady at 10c. with competition not in evidence.

Soap bark began the year in rather strong position. It remained firm most of the year, though prices were lower in December than they had been in January. This was due mainly to the gain in supplies, which early in the year had been moderate and subject to a substantially high price in the primary market. Whole was quoted at 13c. from January to March when some business was done at 13c. That quotation remained unchanged for the balance of the year. Cut and sifted sold for 18c. in January and February and the market was strong. It weakened in March, dropping from 17½c. to 15c. per pound. By the end of May the market had become 15½c. and it remained there until December when it became 14½c. For the greater part of the year it had been stable at 15½c.

The trend in quotations for wahoo root bark was downward steadily throughout the first three-quarters of the year. Beginning at 58c. it was so quoted until the end of April when business was done at 56c. In May the market was down to 54c. and in June it was 52c. Recovery came in October when quotations rose to 55c. and remained thereat for the balance of the year.

Wild cherry was in normal demand with prices mostly firm to steady during the greater part of the twelvemonth. However, in December, and carrying over into January, widespread influenza caused a more than ordinary call for stocks. They were rapidly depleted to the accompaniment of advancing prices. Thin natural began the year at 7½c., reached 8c. in March, receded to 7½c. in May, ended December at that figure, but after the turn of the year sold for 8½c. Rossed thin green was 12c. in January, but after the new year 15c. was readily obtained and stocks were hard to obtain.

Beans

Vanilla beans sold more heavily and freely in 1928 than they had in the previous years. Total imports for eleven months of the calendar year were 1,335,869 pounds as compared with 927,675 pounds in the similar period in 1927. Crops in the Far East and in Mexico proved to be ample and tended to keep the market prices stabilized within normal fluctuations. Late in the year it was learned that the prospect for the next crop of Mexicans was not encouraging and almost immediately there developed in this market a stronger undertone in prices for the Mexican article. Bourbons were likewise a firmer article, especially as the last quarter of the year got underway. It appeared that the foreign shippers were disposed to hold stocks and hence prices were subject to less shading than usual. The firmer trend was short lived; the market resumed its downward trend, sellers here intimating that the depression was being forced in an effort to affect prices to be paid in the Far East. Spot quotations for Bourbon beans began the year at $2 per pound and became high for the year in February and March at $2.10. A decline in April cut the market from $1.90 to $1.75 per pound and barring June and July, when $1.85 was quoted, the tendency was downward. In August orders were booked at $1.75 and in October the market was $1.65 per pound. It remained thereat during the last quarter of the year. That was the lowest price since 1921 when $1.50 was done. Mexicans showed a more stable position. The high price for the year was $3.50 and that figure prevailed in every month until October when the market became $3. In December, $3.25 per pound was done and the market seemed to be very steady. The quotation of $3 was the lowest price prevailing since 1915 when $2.50 was inside for that year.

Berries

Berries developed little of major interest or importance. Cubebs were also on the easy side with prices tending downward. Quotations for XX berries dropped from 45c. in January to 36c. in November when the market stabilized at that figure for the balance of the year. Juniper berries underwent normal transitions of prices, being fairly strong at 6½c. per pound in January but reaching 5c. in June and July. Recovery developed and for the balance of the year the market was 5½c., barring October and November when not more than 5c. had to be paid.

Flowers

Flowers were a group hit badly by unpropitious weather in the critical growing season in Europe. Too much rain in many places and not enough in others caused a decrease in the tonnage of the total flower crop abroad. The result was an advancing market for many articles. Also, many that showed declines were in truly strong position, the declines being mostly the result of the extreme levels reached during the previous year.

An example of this latter group was arnica flowers. The scarcity in 1927 had caused a peak price of $1.50 to prevail at the close of that year. It was still the price in January, 1928, but by the end of March quotations were down to $1.25. This paralleled a somewhat slack demand accompanying buyers' determination to stay out of the market as much as possible until new crop prices developed. The decision to stay out could not be carried out. Pressing needs put the market up to $1.60 per pound in June and July with the trend being downward late in the latter month when sales were made at $1.35. A thoroughly erratic course of prices is clearly evident. In August, $1 per pound was done. September found the market at $1.10 per pound and in October the rise continued until $1.20 was reached. More liberal supplies available after meeting contract requirements permitted quotations to recede to 95c. in November and December, relieved by a slight reaction to $1 early in the latter month. Therefore, while the market had declined from $1.50 in January to 95c. at the end of December, that price was strong and comparatively high in view of the fact that normal quotations would range between 8c. and 12c. each year.

Chamomile flowers were hard to obtain most of the year. The difficulty was mainly one of enforcement of quality standards by the Department of Agriculture. Special attention was given the article almost continuously throughout the year but rejection after rejection was the fate of most arrivals dating from September and continuing to the end of the year. Roman flowers were sold at 20c. in January, were as low as 18c. the greater part of April and permanently in the May-August period. The advance started in September when 23c. was done. By the end of November 42c. was the market and by the close of the year 48c. was the market and many were asking 50c. minimum. Hungarian flowers were often times very hard to get owing to the uncertainties of quality, the rejections that kept spot stocks low, and the presence of numerous unfilled orders especially toward the end of the year. The January price was 19c. and by midyear 15c. was readily done. The advance came over the last two quarters of the year when quotations moved from 15c. to a high of 25c.

Calendula petals were also an article that underwent under-production and consequent advance in prices. The price in January was 90c. and in June it was 85c. By September the scarcity had resulted in prices reaching $1.15 per pound. The top price for the year was $1.35 prevailing at the end of December.

Lavender flowers were mostly firm. Quotations for ordinary flowers prevailed at 30c. to 31c. per pound most of the year. Early reports had made it likely that unfavorable weather had reduced the crop in France but subsequent price developments failed to support such information.

Spanish saffron was highly competitive most of the year. Quotations were high for the year in February at $13 per pound but the trend was downward from then on, though considerable stability existed in the market at $12 to $12.50 per pound during the period March-June. Late in the latter month $11.50 per pound was done and accompanied by modest price recoveries from time to time the trend was downward with the low point for the year being reached at $11.25 per pound in December. There were reports of sales being made at even less than that. Primary market prices justified the general drift of quotations here though at times the market was stimulated by reports of a probable rise.

Herbs and Leaves

Outstanding features in this group of articles were the decline in buchu, deer tongue, and henbane prices. Digitalis was noted on the strong side, the crop in Europe being such as to make an era of high prices inevitable accompanied by a scarcity of stocks. Lobelia passed through a period of moderate changes, the exciting developments of 1927 being succeeded by an era of plentiful stocks and favorable prices.

Buchu declined rather steadily, the reductions being moderate most of the time. The year opened at 47c. per pound and by the end of January 44c. was being done. Recovery put the prices to the high for the year in March when substantial selling was reported at 50c. The downward drift in quotations was slow but very steady until by the end of July 40c. was the market. It remained stable there until November when 39c. was established as the last price for the year. The curtailment of consumption in this country and the plentiful stocks available at fairly attractive prices in the primary market were primarily responsible for the reductions.

Deer tongue was collected in ample proportions in the primary markets. When the crop was in it showed a relatively low cost to the collectors and permitted sales at 10c. beginning in October and continuing throughout the rest of the year. In January the market had been 15c., but by July 1 it was 13c. The rest of the year is revealed in the final price for the year.

Difficulty in obtaining henbane of satisfactory quality was reported most of the time. The department passed much merchandise but it was rare to find dealers willing to quote U.S.P. merchandise. Their offerings were almost exclusively on the basis "passed by the department." Price trend was downward. The high for the year was 21c., prevailing in January. The low was 18c., reached in May and remaining the market for the balance of the year.

Digitalis was prominent most of the year, being confirmed and committed to strength because of underproduction and speculative accumulation of the small crop in the hands of strong shippers abroad. The price trend was upward beginning in the second quarter of the year. Sales in January confirmed the spot market at 35c., but by June 45c. was being readily obtained and as the situation became clearer the advances became more frequent and the strength of the market more apparent. Sales made the market 50c. by the end of September and by the close of the year it was hard to obtain deliveries at 60c.; sales had actually been made at 65c.

Belladonna leaves showed little development during the year, the market ranging 16c. to 19c., and being high in February and low in October, and forward to the end of the year.

Miscellaneous

Ergot was free from the speculative features that had made it one of the most spectacular items in the botanical drug market of 1927. Due to the campaign among buyers, demand had been cut to a volume that permitted the merchandise released for consumption to care for all requirements. Price trend was downward most of 1928. Offerings of material of a quality satisfactory to the Department of Agriculture were ample and came into the market under conditions suggestive of a more lively competition. The considerable stocks held by speculators in 1927 were turned into fluid extract to eliminate possible losses through spoilage in storage. The result was a supply of fluid extract which cared for all needs readily and thereby reduced the call for further production of extract. On the whole, 1928 proved to be a buyers' year in this article. Suits against government officers charged with enforcement of requirements of the United States Pharmacopoeia resulted in little of importance. Decisions were mostly adverse to the plaintiffs who appealed and still have their case on appeal with no early prospect of a decision being reached inimicable to the interests of the government.

During the greater part of the first quarter of the year sales were made at $1.45 per pound. Toward the end of March prices were advanced to the high point for the year—namely, $2.05 per pound. From then on the history of prices was continuous: the trend was downward at all times. The declines brought quotations to $1.45 per pound early in June and by the end of that month the market was down to $1.25. August business was written at $1.10 and in September most orders were filled for $1 per pound. The last quarter of the year brought the lowest prices for the twelvemonth—90c. per pound.

Attempts to buy up the Spanish crop with a view to repeating the attempted corner of 1927 were unproductive of the hopes of those engaged in such operations. While a good part of the crop was so bought, the check of price declines and institution of a rise in values failed to develop. Furthermore, reports that Spain would embargo exports of all but Spanish ergot were unconfirmed; the idea had its origin in the United States. If the practice of mixing Russian, Polish or Portuguese ergot with the Spanish article was reprehensible, an export embargo could not have prevented it. The Spanish realized that such mixing could be done as well in Hamburg or any other botanical market as in Spain. In fact, most of the mixing had been done without the boundaries of Spain. Therefore the embargo idea came to little.

The surest check on inferior merchandise was at the door of our own country. The attitude of the Department of Agriculture, through the bureau of chemistry, was one of high regard for standards. The result was that virtually all ergot sold in this country in 1928 was of high standard.

The result of all this was the establishment of a market closer to normal trade conditions and the elimination of many features that had made unsettlement the rule in 1927.

The feature of the market for lycopodium was the severe shortage and sharp advance in prices that came late in the year. The high point was $1 per pound, reached in November, following which arrival of ample stocks put prices down to a normal level. Stability had been the feature in the first two months of the year. During that time business was normal in volume and sales were made mostly at 73c. per pound. In March the market strengthened and advanced to 76c. per pound, but in April it weakened and dropped to a low of 70c. per pound. During May and June sales were made between 70c. and 68c. per pound with 68c. being the low point for the year and prevailing in June, July, August, and a part of September. By the end of the latter month the market was back to 73c. per pound and a stronger undertone began to develop parallel with expanded demand and a shrinkage in available stocks. In October the effect of this steady development of strength was specific. The market advanced to 85c. per pound sharply and with all signs pointing to further advances. Demand caught the market strongly in November and the market was advanced from 85c. to the high of the year, $1 per pound. Arrival and release of stocks in December brought repeated declines each week and by the close of the year 75c. was quoted with conditions suggestive of that figure being shaded.

Roots

Developments in the root group were numerous and mostly indicative of the existence of fairly strong conditions in the market generally. The outstanding fatures were bloodroot, colombo, golden seal, ipecac, jalap, orris, sarsparilla and senega roots.

Bloodroot had two pronounced price movements during the year. The first was an advance that early in the year assumed severe proportions. The low price in January was 22c., but compelling demand met a poor stock available for prompt deliveries. The country was quickly drained of all surplus supplies and price advances were the rule. By the end of March the market was 27c. per pound and the high for the year was reached in April when orders were booked at 34c. per pound. That price continued into May, but the strength of the market proved to be gaseous. One dealer obtained delivery of so substantial a quantity of new root as to break the market wide open. Prices dropped far more swiftly than they had advanced. The break in May was from 34c. down to 19½c. per pound. By September 17c. was being done, at which point a degree of stability developed. During the last quarter of the year the market was 17½c per pound without change and under conditions of fairly normal consuming demand.

Colombo became one of the most prominent features in the botanical market after years of comparative inactivity. Prices were advanced from 5c. per ponnd in January to the high for the year reached in November when sales were made at 20c. That price ruled for the rest of the year. The advance was continuous throughout the year, even temporary setbacks being lacking. The cause for the advance was exhaustion of stocks, or reduction of the same to quantities so small as to constitute a condition of marked strength. London had been usually the principal market for the article, but not a pound had been added to the warehouses. Consumption of the article is large abroad. In this country it is moderate, but was sufficient last year to cause the sensational advances mentioned above.

Golden seal was active most of the year, export request being good. From January through April prices were rather strong and advancing most of the time. Quotations rose from $3.75 per pound to the high for the year at $4.05. Prices were firm to the end of July. In August, reaction set in and business was done at $4 per pound. September and October found the market at $3.90 per pound and toward the end of the latter month $3.75 per pound was quoted. During all of November and a part of December $3.50 was named, but toward the end of the last month of the year $3.25 was noted. Much of this decline was due to liquidation of stocks held by a large fur dealer. Death made liquidation advisable and brought into the market considerable stocks at favorable prices.

Ipecac underwent numerous changes, all being related to demand alone, and showing no effect of speculative activity. Price range in Cartagena root was from the low of $2.35 per pound quoted in June, to the high of $3.15 named early in January. The strong part of the year came from July forward. In that month prices were raised from $2.35 to the basis of $2.50. In August, $2.70 was done often and supplies were moderate. Reaction followed, and by the end of the year as low as $2.45 was being done. The situation strengthened soon after the turn of the year and heavy demand put the entire market to sharply higher positions.

Jalap was without incident of importance until toward the end of the year stocks of USP goods became exhausted, leaving none but very high test merchandise available in this market. The situation was likely to be temporary, but in the meantime a tremendously strong situation had developed without signs that suggested early relief. Prices began the year at 16c. per pound. They were advanced to 19c. in May and became 20c. in the next month. July and August were months of fair demand at unchanged prices. In September the market went as low as 18c. and with the exhaustion of spot stocks a nominal price of 19c. ruled for USP root. The high test goods brought 45c. per pound at the end of the year.

Orris root was a feature of such strength as had not been noted in the market for that material during the past several years. The strength took the form of sharply advancing prices over the period June-December. During that time the spot market for Florentine root rose from 10c. to the basis of 20c. per pound. Verona was raised from 9c. in April to 14c. in December. Of course, powder was raised proportionately. The advances were due to conditions in Italy. All surplus stocks were absorbed. For several years the unsold stocks had been so large as to discourage all possibility of advancing prices. With elimination of the surplus, the advance was almost immediate and was continuous over the last half of the year. The minimum price for Florentine was 9½c. per pound effective in January, while for Verona it was 8½c., which ruled in the same month.

Sarsaparilla root was steady most of the year, the market opening at 21c. per pound in January, reaching 23c. in March, declining during the next few months to 20c., effective over the period June-October. In the latter month sales were made at 19c. The feature advance came suddenly in December, when spot delivery stocks were about wiped out and prime quality material was run up to the basis of 30c., ending the year strong thereat.

Sensational developments were lacking in senega root, but the market was basically strong during the year because of the comparatively high prices paid by the Winnipeg operators when they bought stocks from the native gatherers. The usual declines failed to come, though the market did fall from the top price of $1.30 per pound which prevailed in March after the opening price of $1.28 in January. From March through June the market was static at $1.30. With new crop becoming available, prices dropped moderately, spot quotations becoming $1.10 in July, which was the low point for the year. Recovery to $1.20 came in August, and in October the advance was extended to $1.25 per pound, at which position the article ended the year. A feature of the market was the attempts to break the close control held over the Winnipeg market by about five operators. Two large houses on spot endeavored to establish direct connections with the gatherers in the interior in an effort to cut out the Winnipeg middlemen. The endeavors met with considerable, though not startling, success.

Price Trends

Price trends over the year in forty typical botanical drugs, twenty domestic and twenty foreign, were as follows:—

	May 31	June 30	Sept. 30	Dec. 31
Aletris root	$0.40	$0.37	$0.38	$0.37
Arnica flowers	1.25	1.60	1.10	1.00
Balm of Gilead	.35	.28	.40	.35
Belladonna leaves	.19	.18	.18	.16
Belladonna root	.21	.20	.19	.19
Black haw, root bark	.30	.28	.27	.28
Bloodroot	.27	.19½	.18	.17½
Buchu leaves	.45	.42	.40	.39
Cascara sagrada bark	.13	.13	.13	.13
Chamomile flowers, Hungarian	.17	.15	.21	.25
Cinchona quills	.58	.58	.58	.58
Clover tops	.10	.10	.10	.11
Cottonroot bark	.13	.13	.13	.14½
Cramp bark, genuine	.50	.40	.45	.45
Deer tongue leaves	.14	.13	.10	.10
Elm bark, select	.26	.23	.24	.23
Elder flowers	.15	.17	.18	.19
Ergot	1.95	1.25	1.00	.90
Golden seal root	3.75	4.05	3.90	3.25
Henbane leaves	.19	.18	.18	.18
Insect powder	.36	.33	.47	.42
Jaborandi leaves	.12	.11	.10	.11
Jalap root	.16	.19	.19	*.19
Kola nuts	.09	.13	.12	.13
Lobelia herb	.16	.14½	.15	.14
Lycopodium	.73	.68	.77	.75
Mandrake root	.16	.16	.13	.11
Manna flake, large	.65	.65	.65	.70
Rhubarb root	.35	.39	.40	.39
Sage leaves, Greek	.03½	.03½	.03½	.03½
Sarsaparilla, Mex.	.22	.20	.20	.30
Sassfras bark, select	.27	.25	.27	.24
Senega root	1.30	1.30	1.20	1.25
Senna leaves, T. V.	.07½	.09½	.07½	.07½
Soap bark, whole	.13	.13	.13	.13
Stramonium leaves	.17½	.17½	.17½	.17
Uva ursi	.06	.05½	.06	.06
Valerian root, USP.	.16	.14	.17	.24
Wahoo root, bark	.58	.53	.52	.55
Wild cherry bark, thin green	.08	.07½	.07½	.07½

*No stocks.

	1928.	1927.	1926.
Advanced	12	17	17
Reduced	21	21	15
Unchanged	7	2	8

Botanical Drugs: Record of Prices

Balsams

Copaiba, Para

October 18, 1871, the price was 77½c. to 80c.; 1881, 52½c. to 54c.; 1891, 52¼c. to 55c.; 1901, 45c. to 50c.; 1911, 60c. to 85c.; 1913, 48c. to 50c.; 1919, March, 75c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.45	$0.44	$0.45	$0.45
February	.47½	.45	.48	.44
March	.47½	.47½	.44	.44
April	.55	.47½	.44	.42
May	.57	.55	.42	.42
June	.50	.48	.39	.39
July	.48	.46	.39	.37
August	.46	.45	.37	.37
September	.45	.45	.33	.33
October	.45	.42	.33	.32
November	.45	.42	.32	.32
December	.45	.45	.32	.31
Year	.57	.42	.48	.31

Copaiba, South American

October 18, 1871, the price was 77½c. to 80c.; 1881, 52½c. to 54c.; 1891, 60c.; 1901, 35c. to 40c.; 1911, 38c. to 45c.; 1913, 44c. to 48c.; 1918, January, 97½c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.50	$0.49	$0.50	$0.48
February	.52½	.50	.48	.47
March	.52½	.52½	.47	.47
April	.60	.52½	.47	.46
May	.60	.60	.46	.46
June	.52	.51	.42	.42
July	.50	.48	.40	.38
August	.48	.47½	.38	.38
September	.47½	.47½	.35	.35
October	.47½	.45	.35	.34
November	.50	.45	.34	.33
December				
Year	.60	.45	.50	.33

Fir, Canada

November 22, 1871, the price was $3 to $3.50; October 18, 1881, $2.25; 1891, $1.70 to $1.90; 1901, $3.65 to $3.75; 1911, $4.10 to $4.25; 1913, $9.50 to $10; 1920, April, $16.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$12.00	$11.25	$13.00	$12.00
February	12.00	12.00	13.00	13.00
March	12.00	12.00	13.00	13.00
April	12.00	12.00	13.00	12.50
May	12.00	12.00	12.50	12.00
June	12.00	12.00	12.00	12.00
July	12.00	12.00	12.00	12.00
August	12.00	12.00	12.00	12.00
September	12.00	12.00	12.00	12.00
October	12.00	12.00	12.00	12.00
November	12.00	12.00	12.00	12.00
December	12.00	12.00	12.00	12.00
Year	12.00	11.25	13.00	12.00

Fir, Oregon

March 26, 1873, the price was $3.50; October 18, 1881, nominal; 1891, $1 to $1.10; 1901, 75c. to 80c.; 1911, 80c. to 90c.; 1913, $1.30 to $1.50; 1919, December, $1.90.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.50	$1.35	$1.50	$1.50
February	1.50	1.40	1.50	1.50
March	1.60	1.50	1.50	1.45
April	1.60	1.50	1.45	1.00
May	1.50	1.40	1.00	1.00
June	1.40	1.40	1.00	1.00
July	1.25	1.25	1.05	1.00
August	1.25	1.20	1.00	1.00
September	1.20	1.15	1.00	1.00
October	1.25	1.15	1.00	1.00
November	1.50	1.25	1.00	1.00
December	1.65	1.50	1.00	1.00
Year	1.65	1.15	1.50	1.00

Peru

October 18, 1871, the price was $3.90; 1881, $2.75 to $3; 1891, $1.20 to $1.40; 1901, $1.30 to $1.40; 1911, $1.50 to $1.90; 1913, $1.50 to $1.60; 1920, February, $5.75.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.70	$1.70	$1.65	$1.65
February	1.70	1.70	1.65	1.65
March	1.70	1.70	1.65	1.65
April	1.70	1.65	1.65	1.65
May	1.65	1.65	1.75	1.65
June	1.65	1.60	1.75	1.72½
July	1.65	1.65	1.75	1.72½
August	1.65	1.65	1.72½	1.72½
September	1.65	1.65	1.72½	1.72½
October	1.65	1.65	1.72½	1.72½
November	1.65	1.65	1.72½	1.70
December	1.65	1.65	1.70	1.70
Year	1.70	1.60	1.75	1.65

Tolu

October 18, 1871, the price was 80c.; 1881, 65c. to 70c.; 1891, 27c. to 30c.; 1901, 33c. to 35c.; 1911, 50c. to 60c.; 1913, 80c. to 85c.; 1919, October, $1.75.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.95	$0.95	$1.00	$1.00
February	.95	.90	1.00	1.00
March	.95	.90	1.00	.93
April	.95	.90	.93	.93
May	.90	.90	.95	.93
June	.85	.85	.95	.90
July	.85	.85	1.00	.90
August	.85	.85	1.00	1.00
September	.85	.85	1.00	1.00
October	1.25	.85	1.00	1.00
November	1.25	1.25	1.05	1.00
December	1.20	1.00	1.10	1.00
Year	1.25	.85	1.10	.90

Barks

Black Haw Root

December 20, 1897, the price was 7½c. to 8½c.; October 18, 1901, 10½c. to 12c.; 1911, 19c. to 20c.; 1913, 16c. to 18c.; 1918, December, 65c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.25	$0.25	$0.29	$0.29
February	.25	.25	.30	.29
March	.25	.25	.30	.30
April	.25	.25	.30	.28
May	.25	.25	.28	.28
June	.25	.24	.28	.28
July	.24	.23	.28	.28
August	.26	.23	.28	.28
September	.26	.24	.27	.26
October	.29	.24	.27	.27
November	.29	.29	.27	.27
December	.29	.29	.28	.27
Year	.29	.23	.30	.26

Cinchona, Red, Short, Quills

November 22, 1871, the price was 90c. to $1; October 18, 1881, 15c. to $1.75; 1891, 25c. to 35c.; 1901, 20c. to 25c.; 1911, 18c. to 20c.; 1913, 20c. to 28c.; 1918, May, $1.25.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.60	$0.60	$0.58	$0.58
February	.60	.60	.58	.58
March	.60	.60	.58	.58
April	.60	.60	.58	.58
May	.60	.60	.58	.58
June	.60	.60	.58	.58
July	.60	.58	.58	.58
August	.58	.58	.58	.58
September	.58	.58	.58	.58
October	.58	.58	.58	.58
November	.58	.58	.58	.58
December	.58	.58	.58	.58
Year	.60	.58	.58	.58

Cascara Sagrada, New Crop

March 31, 1880, the price was 40c. to 50c.; October 18, 1891, 5c. to 6c.; 1901, 5c. to 7c.; 1911, 9c. to 10½c.; 1913, 7¾c. to 10c.; 1918, September, 19c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.15	$0.15	$0.13½	$0.13½
February	.15	.14½	.13½	.13
March	.14½	.14½	.13	.13
April	.14½	.14½	.13	.13
May	.14½	.14½	.13	.13
June	.14½	.14½	.13	.13
July	.14½	.14½	.13	.13
August	.14½	.14½	.13	.13
September	.15	.15	.13	.13
October	.15	.13½	.13	.13
November	.13½	.13½	.13	.13
December	.13½	.13½	.13	.13
Year	.15	.13½	.13½	.13

Condurango

November 22, 1871, the price was $6 to $8; October 18, 1896, 18c.; 1901, 14c. to 16c.; 1911, 17c. to 18c.; 1913, 12½c. to 14c.; 1917, September, 14c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13	$0.13	$0.13	$0.13
February	.13	.13	.14	.14
March	.13	.12½	.14	.13
April	.13	.12½	.14	.14
May	.13	.13	.14	.14
June	.13	.13	.14	.13½
July	.13	.13	.13	.13
August	.13	.13	.13	.13
September	.13	.13	.14	.14
October	.13	.13	.14	.14
November	.13	.13	.14	.14
December	.13	.13	.15	.13½
Year	.13	.12½	.15	.13

Cottonroot

August 25, 1886, the price was 8c. to 9c.; October 18, 1881, 8c. to 9c.; 1906, 8½c. to 10c.; 1911, 22c. to 23c.; 1913, 6c. to 7c.; 1920, August, 80c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12½	$0.11½	$0.12	$0.12
February	.13	.12½	.13	.13
March	.12½	.12½	.13	.13
April	.12½	.12½	.13	.12
May	.12½	.12	.12	.12
June	.12	.12	.13	.11½
July	.12	.12	.11½	.11½
August	.12	.12	.13	.11½
September	.12½	.12½	.13	.13
October	.12½	.12½	.14½	.14½
November	.13	.12½	.14½	.14½
December	.13	.12	.14½	.14½
Year	.13	.11½	.14½	.11½

Elm, Selected, Bundles

February 18, 1874, the price was 16c.; October 8, 1881, 12½c. to 14c.; 1891, 12½c. to 14c.; 1901, 12c.; 1911, 17c. to 20c.; 1913, 7c. to 21c.; 1920, October, 90c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.20	$0.20	$0.24	$0.24
February	.21	.20	.25	.25
March	.20	.20	.26	.26
April	.21	.20	.26	.26
May	.21	.21	.26	.25
June	.21	.21	.25	.23
July	.21	.21	.25	.23
August	.21	.21	.24	.23
September	.21	.21	.24	.24
October	.21	.21	.25	.24
November	.21	.21	.25	.25
December	.24	.23	.23	.23
Year	.24	.20	.26	.23

Lemon Peel

October 18, 1911, the price was 5c. to 6c.; 1913, 6¼c. to 7c.; 1918, January, 10c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.10	$0.09½	$0.09½	$0.09½
February	.10	.10	.09½	.09½
March	.11	.10	.09½	.09½
April	.11	.11	.09½	.09½
May	.11	.09	.09½	.09½
June	.09	.09	.09½	.09½
July	.09	.09	.09½	.09½
August	.09	.09	.09½	.09½
September	.09	.09	.11	.09½
October	.09	.09	.11	.11
November	.09½	.09½	.11	.11
December	.09½	.09½	.11	.09½
Year	.11	.09	.11	.09½

Orange Peel, Bitter Curacao

November 22, 1871, the price was 8c. to 9c.; October 18, 1881, 13c. to 14c.; 1891, 4½c. to 10c.; 1901, 3c. to 4c.; 1911, 4c. to 5c.; 1913, 4c. to 5c.; 1919, August, 21c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$0.06½	$0.09	$0.09
February	.12	.07¾	.09	.09
March	.12	.12	.09	.09
April	.11	.10	.11½	.09
May	.11	.10	.11½	.11
June	.13	.10	.11	.11
July	.10	.10	.11	.11
August	.10	.10	.11	.10½
September	.10	.10	.10½	.10½
October	.10	.10	.10½	.10
November	.10	.09	.10	.10
December	.09	.09	.10	.10
Year	.13	.06½	.11½	.09

Prickly Ash

April 3, 1878, the price, crushed, was 13c.; October 18, 1881, 10c. to 16c.; 1891, 9c. to 10c.; 1901, 8c. to 10c.; 1911, 28c. to 35c.; 1916, 14c. to 16c.; 1920, December, 28c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.15	$0.15	$0.15	$0.13½
February	.15	.15	.15	.15
March	.15	.13½	.15	.15
April	.13½	.13½	.15	.15
May	.13½	.13½	.15	.15
June	.13½	.13½	.15	.15
July	.13½	.13½	.15	.15
August	.13½	.13½	.15	.15
September	.13½	.13½	.15	.15
October	.13½	.13½	.15	.14
November	.13½	.13½	.14	.14
December	.13½	.13½	.14	.14
Year	.15	.13½	.15	.13½

Sassafras, Ordinary

November 22, 1871, the price was 5c. to 5½c.; October 18, 1881, 6c. to 6½c.; 1891, 8c. to 10c.; 1901, 6½c. to 10c.; 1911, 12c. to 14c.; 1913, 11c. to 13c.; 1919, December, 49c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.15	$0.15	$0.15	$0.15
February	.15	.15	.15	.15
March	.15	.15	.15	.15
April	.15	.15	.15	.15
May	.15	.15	.15	.15
June	.15	.15	.14	.14
July	.15	.15	.14	.14
August	.15	.15	.14	.14
September	.15	.15	.16	.14
October	.15	.15	.16	.14
November	.15	.15	.14	.14
December	.15	.15	.14	.14
Year	.15	.15	.16	.14

Soapbark, Whole

April 2, 1878, the price was 8c.; October 18, 1881, 4½c. to 6½c.; 1891, 8½c. to 9c.; 1901, 3½c. to 4c.; 1911, 6c. to 6½c.; 1913, 8½c. to 9½c.; 1919, August, 16c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09	$0.09	$0.14	$0.14
February	.10	.09	.14	.14
March	.11	.10	.14	.13
April	.11	.11	.13	.13
May	.11	.10	.13	.13
June	.10	.10	.13	.13
July	.12	.10	.13	.13
August	.12	.12	.13	.13
September	.14	.14	.13	.13
October	.14	.14	.13	.13
November	.14	.14	.13	.13
December	.14	.14	.13	.13
Year	.14	.09	.14	.13

Soapbark, Crushed

April 2, 1878, the price was 16c.; October 18, 1881, 8c. to 8½c.; 1891, 9c. to 10c.; 1901, 5c. to 6c.; 1911, 7c. to 7½c.; 1913, 10c.; 1919, August, 23c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11	$0.11	$0.16	$0.16
February	.13½	.11	.16	.16
March	.13½	.13½	.16	.16
April	.13½	.13½	.16	.15
May	.13	.13	.15½	.15
June	.13	.13	.15	.15
July	.15	.13	.15	.15
August	.15	.15	.15	.15
September	.17	.17	.15½	.15
October	.16	.16	.15½	.15½
November	.16	.16	.15½	.15½
December	.16	.15	.15½	.15½
Year	.17	.11	.16	.15

Soapbark, Cut and Sifted

April 2, 1878, the price was 3c.; October 22, 1886, 6c. to 7c.; 1911, 8c. to 8½c.; 1913, 10c.; 1920, May, 26c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.10	$0.10	$0.18	$0.18
February	.13½	.10	.18	.18
March	.13½	.13½	.17½	.15
April	.13½	.13½	.15	.15
May	.13	.13	.15½	.15
June	.13	.13	.15½	.15½
July	.14½	.13	.15½	.15½
August	.14½	.14½	.15½	.15½
September	.16	.16	.15½	.15½
October	.16	.16	.15½	.15½
November	.16	.16	.15½	.15½
December	.18	.15	.14½	.14½
Year	.18	.10	.18	.14½

Wahoo Root

December 20, 1897, the price was 19c. to 20c.; October 18, 1901, 16c. to 20c.; 1911, 40c. to 42c.; 1913, 36c. to 50c.; 1920, December, 90c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.64	$0.64	$0.58	$0.58
February	.64	.63	.58	.58
March	.63	.63	.58	.58
April	.63	.63	.58	.56
May	.63	.56	.56	.54
June	.55	.55	.54	.52
July	.55	.55	.52	.52
August	.55	.55	.52	.52
September	.55	.55	.52	.52
October	.55	.55	.55	.52
November	.58	.55	.55	.55
December	.58	.58	.55	.55
Year	.64	.55	.58	.52

Wild Cherry, Thin, Natural

April 28, 1875, the price was 7c.; October 18, 1881, 9c.; 1901, 7½c.; 1911, 9c.; 1913, 9c.; 1919, January, 35c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07½	$0.07½	$0.07½	$0.07½
February	.08½	.07½	.07½	.07½
March	.08½	.08½	.08	.08
April	.08½	.08½	.08	.07½
May	.08½	.07½	.07½	.07½
June	.07½	.07½	.07½	.07½
July	.07½	.07½	.07½	.07½
August	.07½	.07½	.07½	.07½
September	.07½	.07½	.07½	.07½
October	.07½	.07½	.07½	.07½
November	.07½	.07½	.07½	.07½
December	.07½	.07½	.07½	.07½
Year	.08½	.07½	.08	.07½

Beans

Calabar

February 16, 1881, the price was 40c.; October 18, 1881, 40c.; 1891, 16c. to 18c.; 1901, 8c. to 12c.; 1911, 37c. to 60c.; 1913, 25c. to 30c.; 1918, October, 75c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.35	$0.35	$0.25	$0.25
February	.35	.35	.25	.23
March	.35	.35	.23	.23
April	.35	.35	.23	.23
May	.35	.25	.23	.23
June	.25	.25	.23	.23
July	.25	.25	.23	.23
August	.25	.25	.23	.23
September	.25	.25	.23	.23
October	.25	.25	.23	.23
November	.25	.25	.23	.22
December	.25	.25	.22	.22
Year	.35	.25	.25	.22

Tonka, Angostura

November 22, 1871, the price was 55c. to 60c.; October 18, 1881, $2.50 to $3.25; 1891, $1.80 to $2.20; 1901, 80c. to 85c.; 1911, $5.25 to $5.50; 1913, $1.75 to $2; 1919, July, $1.75.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.90	$1.90	$1.75	$1.75
February	1.90	1.90	1.75	1.75
March	1.90	1.75	1.75	1.65
April	1.75	1.75	1.65	1.65
May	1.75	1.75	1.65	1.65
June	1.75	1.75	1.65	1.65
July	1.75	1.75	1.65	1.65
August	1.75	1.75	1.65	1.65
September	1.75	1.75	1.65	1.65
October	1.75	1.75	1.65	1.65
November	1.75	1.75	1.65	1.65
December	1.75	1.75	1.85	1.65
Year	1.90	1.75	1.85	1.65

Vanilla, Bourbon, Whole

April 14, 1880, the price was $5 to $8; October 18, 1881, $6 to $10; 1891, $3 to $6; 1901, $4.75 to $8.50; 1911, $3.85 to $4.50; 1913, $3 to $3.75; 1919, August, $3.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$3.00	$2.75	$2.00	$2.00
February	2.75	2.50	2.10	2.00
March	2.65	2.50	2.10	1.90
April	2.65	2.65	1.90	1.75
May	2.65	2.65	1.75	1.75
June	2.25	2.10	1.85	1.75
July	2.10	2.00	1.85	1.85
August	2.00	1.75	1.85	1.75
September	2.00	1.90	1.75	1.75
October	1.75	2.00	1.65	1.65
November	2.25	2.00	1.65	1.65
December	2.00	2.00	1.65	1.65
Year	3.00	1.75	2.10	1.65

Twenty-nine Years' Prices

	H.	L.
1928	$2.10	$1.65
1927	3.00	1.75
1926	4.00	2.50
1925	9.50	2.75
1924	12.00	6.00
1923	6.00	2.75
1922	3.00	2.75
1921	2.75	1.50
1920	3.00	1.75
1919	2.85	2.25
1918	2.75	2.00
1917	2.50	2.00
1916	2.75	2.50
1915	3.50	2.25
1914	4.50	2.75
1913	3.10	2.75
1912	4.50	3.00
1911	3.75	2.75
1910	3.00	2.75
1909	3.00	1.75
1908	3.00	1.50
1907	3.00	1.25
1906	1.50	1.00
1905	1.50	1.00
1904	1.50	1.50
1903	2.50	1.50
1902	3.00	2.50
1901	4.75	3.00
1900	4.50	4.00

Vanilla, Mexican, Whole

November 22, 1871, the price was $14 to $16; October 18, 1881, $5 to $15; 1891, $4 to $8; 1901, $8 to $13.50; 1911, $4 to $5; 1913, $3.75 to $5; 1917, April, $5.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$4.25	$4.25	$3.50	$3.25
February	4.25	4.00	3.50	3.50
March	4.00	3.75	3.50	3.50
April	3.75	3.75	3.50	3.25
May	3.75	3.75	3.25	3.25
June	3.50	3.50	3.50	3.25
July	3.50	3.50	3.50	3.50
August	3.50	3.50	3.50	3.50
September	3.50	3.50	3.50	3.25
October	3.50	3.50	3.00	3.00
November	3.50	3.50	3.00	3.00
December	3.50	3.25	3.25	3.25
Year	4.25	3.25	3.50	3.00

Twenty-nine Years' Prices

	H.	L.
1928	$3.50	$3.00
1927	4.25	3.25
1926	8.75	4.50
1925	11.00	6.75
1924	13.00	10.50
1923	11.00	8.50
1922	12.00	7.50
1921	7.00	3.50
1920	4.50	3.75
1919	4.50	4.25
1918	4.75	4.25
1917	5.00	4.50
1916	5.00	3.75
1915	3.75	2.50
1914	5.00	3.50
1913	4.00	3.62½
1912	5.00	3.50
1911	4.00	2.75
1910	3.37½	2.75
1909	3.25	2.75
1908	4.25	3.00
1907	4.25	2.75
1906	2.75	2.75
1905	3.59	2.75
1904	5.00	3.75
1903	6.50	5.00
1902	6.75	4.75
1901	9.00	6.75
1900	11.00	9.00

Berries

Cubeb XX

January 12, 1881, the price was 25c.; October 18, 1881, $1; 1891, 85c.; 1901, 14c. to 17c.; 1911, 44c. to 46c.; 1913, 40c. to 42c.; 1920, January, $1.50.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.49	$0.49	$0.45	$0.45
February	.48	.48	.45	.45
March	.48	.48	.45	.45
April	.48	.45	.45	.38
May	.45	.45	.38	.38
June	.45	.45	.38	.38
July	.45	.45	.37	.37
August	.45	.45	.37	.37
September	.45	.45	.37	.37
October	.45	.45	.37	.37
November	.45	.45	.37	.36
December	.45	.45	.36	.36
Year	.49	.45	.45	.36

Cubeb, Powdered

October 18, 1871, the price was 35c.; 1881, $1.35; 1891, 80c.; 1901, 14c. to 17c.; 1911, 44c. to 46c.; 1913, 40c. to 42c.; 1919, November, $1.45.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.50	$0.50	$0.45	$0.45
February	.50	.49	.45	.45
March	.49	.49	.45	.45
April	.49	.48	.45	.43
May	.48	.47	.43	.43
June	.47	.47	.43	.43
July	.47	.47	.42	.42
August	.47	.45	.42	.42
September	.45	.45	.42	.42
October	.45	.45	.42	.42
November	.45	.45	.42	.41
December	.45	.45	.41	.40
Year	.50	.45	.45	.40

Juniper

January 17, 1872, the price was 4½c. to 5c.; October 18, 1881, 3½c. to 4c.; 1891, 2½c. to 3c.; 1901, 2¾c. to 3c.; 1911, 3¼c. to 3¾c.; 1913, 4c. to 4½c.; 1919, 12c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07	$0.07	$0.06½	$0.06½
February	.07	.07	.06½	.06½
March	.07	.07	.06	.05¾
April	.07	.07	.05¾	.05½
May	.07	.07	.05½	.05½
June	.06½	.06½	.05	.05
July	.06½	.06½	.05½	.05
August	.06½	.06	.05½	.05¼
September	.07	.06½	.05¼	.05¼
October	.07	.06½	.05	.05
November	.07	.07	.05	.05
December	.07	.06½	.05½	.05
Year	.07	.06	.06½	.05

Prickly Ash

January 19, 1881, the price was 90c. to $1; October 18, 1881, 90c. to $1; 1891, $1; 1901, 45c. to 60c.; 1911, 75c. to 81c.; 1913, 24c. to 30c.; 1919, September, 14c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.20	$0.20	$0.20	$0.20
February	.20	.20	.20	.20
March	.20	.20	.20	.20
April	.20	.20	.20	.20
May	.20	.20	.20	.20
June	.20	.20	.20	.20
July	.20	.20	.20	.20
August	.20	.20	.18	.18
September	.20	.20	.18	.18
October	.20	.20	.18	.18
November	.20	.20	.18	.18
December	.20	.20	.18	.18
Year	.20	.20	.20	.18

Flowers

Arnica

November 22, 1871, the price was 10c. to 11c.; October 18, 1881, 9c. to 10c.; 1891, 16c. to 18c.; 1901, 8½c. to 9½c.; 1911, 13c. to 14c.; 1913, 15c. to 16c.; 1917, April, $3.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.27	$0.26	$1.50	$1.45
February	.45	.25	1.45	1.45
March	.55	.55	1.45	1.25
April	.55	.50	1.35	1.25
May	.50	.50	1.35	1.35
June	.50	.48	1.60	1.35
July	.48	.48	1.60	1.35
August	.50	.50	1.35	1.00
September	.70	.55	1.10	1.10
October	1.25	.70	1.20	1.10
November	1.50	1.25	1.10	.95
December	1.50	1.48	1.00	.95
Year	1.50	.25	1.60	.95

Chamomile, Roman

October 18, 1971, the price was 20c. to 30c.; 1881, 14c. to 16c.; 1891, 20c. to 35c.; 1901, 18c. to 20c.; 1911, 27c. to 35c.; 1913, 21c. to 24c.; 1917, May, $1.35.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.21	$0.21	$0.21	$0.20
February	.21	.21	.20	.20
March	.21	.21	.20	.20
April	.21	.21	.20	.18
May	.21	.21	.18	.18
June	.21	.21	.18	.18
July	.21	.21	.18	.18
August	.21	.21	.18	.18
September	.21	.21	.23	.18
October	.21	.21	.22	.22
November	.21	.21	.42	.22
December	.21	.21	.48	.42
Year	.21	.21	.48	.18

Insect Powder

May 29, 1872, the price was 55c. to 80c.; October 18, 1881, 40c. to 42c.; 1891, 17c. to 24c.; 1901, 15c. to 24c.; 1911, 14c. to 30c.; 1913, 22c. to 40c.; 1920, March, $1.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.22	$0.22	$0.34	$0.28
February	.21	.21	.39	.36
March	.21	.21	.36	.36
April	.23	.21	.36	.35
May	.23	.23	.33	.33
June	.23	.23	.33	.33
July	.23	.21	.38	.33
August	.26	.21	.38	.38
September	.26	.24	.42	.38
October	.24	.24	.42	.37
November	.24	.24	.37	.37
December	.28	.24	.37	.37
Year	.28	.21	.42	.28

Lavender, Ordinary

June 12, 1872, the price was 5c. to 6c.; October 18, 1881, 4c. to 5½c.; 1891, 3c. to 5c.; 1901, 4c. to 5c.; 1911, 7c. to 9c.; 1913, 10c. to 11c.; 1919, January, 27c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.35	$0.30	$0.31	$0.31
February	.35	.35	.31	.30
March	.35	.35	.30	.30
April	.35	.35	.30	.30
May	.35	.34	.30	.30
June	.34	.34	.30	.30
July	.34	.34	.30	.30
August	.34	.34	.30	.30
September	.34	.34	.30	.30
October	.34	.31	.30	.30
November	.31	.31	.30	.30
December	.31	.31	.30	.30
Year	.35	.30	.31	.30

Saffron, American

November 22, 1871, the price was $1.75 to $2; October 18, 1881, 40c.; 1891, 24c.; 1901, 14c. to 20c.; 1911, 30c. to 32c.; 1913, 60c. to 65c.; 1917, January, 75c.

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.38	$0.38	$0.35	$0.35
February	.36	.35	.35	.35
March	.37	.35	.35	.35
April	.35	.35	.35	.30
May	.35	.35	.30	.30
June	.35	.35	.30	.30
July	.35	.35	.30	.30
August	.35	.35	.30	.30
September	.35	.35	.28	.28
October	.35	.35	.28	.28
November	.35	.35	.30	.28
December	.35	.35	.30	.30
Year	.38	.35	.35	.28

Nineteen Years' Prices

	H.	L.
1928	$0.35	$0.28
1927	.38	.35
1926	.40	.38
1925	.40	.40
1924	.60	.60
1923	1.40	.78
1922	1.50	1.05
1921	1.35	.68
1920	1.00	.33
1919	.40	.33
1918	.48	.39
1917	.75	.45
1916	2.00	.75
1915	1.25	.32
1914	.60	.35
1913	.45	.30
1912	.45	.33
1911	.33	.18
1910	.35	.18

Saffron, Spanish

November 22, 1871, the price was $13 to $14; October 18, 1881, $17 to $18; 1891, $9.50 to $11.50; 1901, $6.75 to $7; 1911, $10 to $11; 1913, $12.25 to $12.75; 1918, July, $16.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$23.00	$18.00	$12.50	$12.50
February	19.00	18.00	13.00	12.00
March	20.00	18.00	12.50	12.50
April	20.00	20.00	12.00	12.00
May	19.00	19.00	12.00	12.00
June	18.00	17.00	12.00	11.50
July	17.50	17.00	11.75	11.50
August	16.00	16.00	11.75	11.50
September	16.00	15.25	11.50	11.50
October	15.25	14.50	11.75	11.50
November	14.50	14.50	12.00	12.00
December	14.50	14.00	11.50	11.25
Year	23.00	14.00	13.00	11.25

Herbs and Leaves

Aconite

April 2, 1878, the price of powder was 20c. to 21c.; October 18, 1881, 8c. to 10c.; 1891, 10c. to 11c.; 1901, 9c. to 10c.; 1911, 7c. to 8c.; 1913, 7c. to 8c.; 1920, August, 70c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09	$0.09	$0.11	$0.10
February	.09	.09	.11	.11
March	.09	.09	.11	.11
April	.09	.09	.11	.11
May	.09	.09	.11	.11
June	.09	.09	.11	.11
July	.09	.09	.11	.11
August	.09	.09	.11	.11
September	.10	.09	.11	.11
October	.10	.10	.12	.11
November	.10	.10	.12	.12
December	.10	.10	.12	.12
Year	.10	.09	.12	.10

Belladonna

April 2, 1878, the price of powder was 26c. to 27c.; October 18, 1881, whole, 14c. to 16c.; 1891, 11c. to 15c.; 1901, 14c. to 16c.; 1911, 14c. to 17c.; 1913, 16c.; 1918, February, $1.05.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.19	$0.18	$0.18¼	$0.18½
February	.19	.19	.19	.18½
March	.19	.19	.19	.19
April	.19	.19	.19	.18
May	.19	.19	.18	.18
June	.19	.18	.18	.18
July	.19	.18	.18	.18
August	.19	.18	.18	.18
September	.19	.18½	.18	.18
October	.18½	.18½	.18	.16
November	.18½	.18½	.16	.16
December	.18½	.18½	.16	.16
Year	.19	.18	.19	.16

Buchu, Short

November 22, 1871, the price of short was 15c. to 16c.; long, 24c. to 26c.; October 18, 1881, short, 18c. to 20c.; long, 47c. to 50c.; 1891, short, 11c. to 20c.; long, 65c.; 1901, short, 26c. to 28c.; long, 75c.; 1911, short, $1.10 to $1.15; long, 65c. to 70c.; 1913, short, $1.30 to $1.35; long, $1.30 to $1.35; 1920, short, June, $4; long, October, $3.30.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.52	$0.48	$0.47	$0.44
February	.48	.48	.44	.44
March	.47	.47	.50	.44
April	.48	.47	.45	.43
May	.46	.45	.43	.43
June	.45	.44	.42	.42
July	.44	.44	.42	.40
August	.44	.43	.40	.40
September	.45	.43	.40	.40
October	.50	.45	.40	.40
November	.53	.52	.40	.39
December	.52	.47	.39	.39
Year	.53	.43	.50	.39

Seventeen Years' Prices

Per pound

	H.	L.
1928	$0.50	$0.39
1927	.53	.43
1926	.55	.45
1925	.80	.55
1924	.85	.73
1923	1.10	.85
1922	1.12	.85
1921	2.60	1.15
1920	4.00	2.35
1919	3.25	1.75
1918	2.60	1.15
1917	1.35	1.15
1916	1.30	1.15
1915	1.55	1.05
1914	1.85	1.30
1913	1.50	1.25
1912	1.65	.95

Cannabis, Domestic, U.S.P.

May 8, 1899, the price was 14c. to 15½c.; October 18, 1901, 50c. to 55c.; 1911, $1.25 to $1.30; 1913, $1.45; 1918, January, $1.50.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.24	$0.23	$0.20	$0.20
February	.23	.23	.20	.20
March	.23	.23	.20	.20
April	.23	.23	.20	.20
May	.23	.21	.20	.20
June	.21	.21	.22	.20
July	.21	.21	.22	.22
August	.21	.21	.22	.22
September	.30	.21	.28	.22
October	.30	.22	.28	.28
November	.20	.20	.28	.28
December	.20	.20	.28	.28
Year	.30	.20	.28	.20

Deer Tongue

April 2, 1878, the price was 8c.; October 18, 1881, 7c. to 8c.; 1901, 3c. to 4c.; 1911, 8c. to 9c.; 1913, 7½c. to 8c.; 1918, February, 25c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.20	$0.20	$0.15	$0.14
February	.20	.20	.14	.14
March	.20	.19	.14	.14
April	.19	.19	.14	.14
May	.22	.19	.14	.13
June	.22	.20	.13	.13
July	.18	.16	.13	.13
August	.18	.16	.13	.12
September	.18	.17	.12	.12
October	.17	.17	.10	.10
November	.15	.15	.10	.10
December	.15	.15	.10	.10
Year	.22	.15	.15	.10

Henbane

April 2, 1878, the price of powder was 22c.; October 18, 1881, whole, 12c. to 14c.; 1891, 10c.; 1901, 9c. to 12c.; 1911, 9c. to 10c.; 1913, 6½c. to 7c.; 1918, $2.10.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.19	$0.19	$0.21	$0.20
February	.22	.19	.20	.18
March	.22	.22	.19	.19
April	.22	.22	.19	.19
May	.35	.22	.19	.18
June	.35	.35	.18	.18
July	.35	.35	.18	.18
August	.35	.24	.18	.18
September	.24	.23	.18	.18
October	.23	.21	.18	.18
November	.21	.21	.18	.18
December	.21	.21	.18	.18
Year	.35	.19	.21	.18

Laurel, Italian

April 2, 1878, the price of ground was 10c.; October 18, 1881, whole, 3c. to 5c.; 1891, 3½c. to 4c.; 1901, 3c. to 4c.; 1911, 3¼c. to 3½c.; 1913, 3½c. to 3¾c.; 1918, April, 16c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04½	$0.04½	$0.04½	$0.04½
February	.04½	.04½	.04½	.04½
March	.04¾	.04½	.04½	.04½
April	.04¾	.04¾	.04½	.04½
May	.05	.04½	.04½	.04½
June	.05¼	.05¼	.04½	.04½
July	.05¼	.05	.04½	.04½
August	.05	.04¾	.04½	.04½
September	.04¾	.04¾	.04½	.04½
October	.04½	.04½	.04½	.04½
November	.04½	.04½	.04¼	.04½
December	.04½	.04½	.04¼	.04½
Year	.05¼	.04¾	.04½	.04½

Pennyroyal

December 20, 1897, the price was 8½c.; October 18, 1901, 6½c.; 1911, 4c. to 5c.; 1913, 4c. to 5c.; 1918, January, 18c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$0.08	$0.08	$0.08
February	.07	.07	.08	.08
March	.07	.07	.06	.06
April	.07	.07	.06	.06
May	.07	.07	.06	.06
June	.07	.07	.06	.06
July	.07	.07	.06	.06
August	.07	.07	.06	.06
September	.07	.07	.06	.06
October	.07	.07	.07	.06
November	.08	.07	.07	.07
December	.08	.07	.07	.07
Year	.08	.07	.08	.06

Prince's Pine Herb

October 18, 1871, the price was 3½c. to 4c.; 1881, 8c. to 9c.; 1891, 8c.; 1901, 8c.; 1911, 8c. to 10c.; 1913, 8c. to 10c.; 1918, October, 50c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.14	$0.14	$0.15	$0.15
February	.12½	.12½	.15	.15
March	.12½	.12½	.15	.15
April	.12½	.12½	.15	.14
May	.12½	.12½	.14	.14
June	.12½	.12¼	.15	.15
July	.12½	.12½	.15	.15
August	.12½	.12	.15	.15
September	.14	.12	.15	.15
October	.15	.15	.15	.15
November	.15	.15	.15	.15
December	.15	.15	.15	.15
Year	.15	.12	.15	.14

Sage, Greek

March 26, 1873, the price was 3½c. to 4c.; October 18, 1881, Italian, 2¼c. to 2½c.; 1891, Italian, 5½c. to 8c.; 1901, Italian, 3¾c. to 3¾c.; 1911, Italian, 3¼c. to 4c.; 1913, Greek, 3c. to 4c.; 1918, November, 36c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.03	$0.03	$0.03½	$0.03½
February	.03	.03	.03½	.03½
March	.03	.03	.03½	.03½
April	No stocks		.03½	.03½
May	No stocks		.03½	.03½
June	No stocks		.03½	.03½
July	No stocks		.03½	.03½
August	No stocks		.03½	.03½
September	No stocks		.03½	.03½
October	No stocks		.03½	.03½
November	.03½	.03½	.03½	.03½
December	.03½	.03½	.03½	.03½
Year	.03½	.03	.03½	.03½

Senna, Tinnevelly No. 3

October 18, 1871, the price was 16c.; 1881, 11c. to 15c.; 1891, 5c. to 18c.; 1901, 6¼c. to 14c.; 1911, 6c. to 12c.; 1913, 7c. to 9c.; 1919, November, 17c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07½	$0.07½	$0.07½	$0.07½
February	.07½	.07½	.07½	.07½
March	.07½	.07½	.07½	.07½
April	.07½	.07½	.07½	.07½
May	.07½	.07½	.08	.07½
June	.07½	.07½	.08	.08
July	.07½	.07½	.08	.07½
August	.07½	.07½	.07½	.07½
September	.07½	.07½	.07½	.07½
October	.07½	.07½	.07½	.07½
November	.07½	.07½	.07½	.07½
December	.07½	.07½	.07½	.07½
Year	.07½	.07½	.08	.07½

Stramonium

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.17	$0.16	$0.18	$0.17½
February	.18	.17	.17½	.17½
March	.19	.19	.17½	.17½
April	.19	.17	.17½	.17½
May	.17	.16	.17½	.17½
June	.16	.16	.17½	.16
July	.16	.16	.16	.16
August	.16	.16	.18	.16
September	.16	.16	.18	.17½
October	.19	.16	.17½	.17½
November	.19½	.19	.17½	.17½
December	.19½	.18	.17	.17
Year	.19½	.16	.18	.16

Uva Ursi

May 29, 1872, the price was 6c. to 7c.; October 18, 1881, 4c. to 5½c.; 1891, 5c. to 7c.; 1901, 3½c. to 5c.; 1911, 3¾c. to 4c.; 1913, 3½c. to 4c.; 1918, May, 24c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.05	$0.05	$0.05½	$0.05½
February	.05	.05	.06¼	.05½
March	.05	.05	.06¼	.06
April	.05½	.05	.06	.06
May	.05½	.05½	.06	.05½
June	.05½	.05½	.05½	.05½
July	.05½	.05½	.05½	.05½
August	.05½	.05½	.06	.06
September	.05½	.05½	.06	.06
October	.05½	.05½	.06	.06
November	.05½	.05½	.06	.06
December	.05½	.05½	.06	.06
Year	.05½	.05	.06¼	.05½

Miscellaneous

Balm of Gilead

December 20, 1899, the price was 35c.; October 18, 1901, 32c.; 1911, 25c. to 26c.; 1913, 24c. to 26c.; 1919, March, $3.60.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.38	$0.37	$0.35	$0.35
February	.38	.38	.35	.35
March	.38	.38	.35	.35
April	.38	.38	.37	.37
May	.38	.38	.37	.28
June	.38	.37	.28	.28
July	.35	.35	.28	.28
August	.35	.35	.28	.28
September	.35	.35	.40	.28
October	.35	.35	.35	.35
November	.35	.35	.35	.35
December	.35	.35	.35	.35
Year	.38	.35	.40	.28

Ergot

November 22, 1871, the price was 80c.; October 18, 1881, 60c. to 65c.; 1891, 38c. to 43c.; 1901, 42c. to 45c.; 1911, $1.25 to $1.30; 1913, $1.25 to $1.30; 1919, December, $5.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.25	$1.20	$1.45	$1.45
February	1.23	1.10	1.45	1.45
March	1.10	1.05	2.05	1.45
April	1.10	1.05	1.95	1.95
May	1.08	.95	1.95	1.95
June	.90	.90	1.45	1.25
July	.80	.80	1.25	1.20
August	1.40	.85	1.10	1.10
September	1.60	1.40	1.00	1.00
October	1.60	1.45	.90	.90
November	1.45	1.40	.90	.90
December	1.45	1.45	.90	.90
Year	1.60	.80	2.05	.90

Lycopodium

February 25, 1874, the price was 70c.; October 18, 1881, 32c. to 34c.; 1891, 33c. to 36c.; 1901, 52c. to 54c.; 1911, 48c. to 50c.; 1913, 42c. to 44c.; 1921, February, $4.75.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.85	$0.83	$0.73	$0.73
February	.83	.80	.73	.73
March	.83	.83	.76	.73
April	.83	.80	.73	.70
May	.80	.80	.70	.70
June	.80	.80	.70	.68
July	.80	.80	.68	.68
August	.80	.70	.68	.68
September	.72	.70	.73	.68
October	.72	.72	.85	.85
November	.73	.72	1.00	.85
December	.73	.73	.78	.75
Year	.85	.70	1.00	.68

Manna, Flake

October 18, 1871, the price on large flake was $1.40; small flake, 83c. to 85c.; 1881, large flake, 95c. to $1; small flake, 38c. to 40c.; 1891, large flake, 75c. to 80c.; small flake, 30c. to 35c.; 1901, large flake, 80c. to $1; small flake, 30c. to 35c.; 1911, large flake, $1; small flake, 75c. to 80c.; 1913, large flake, 85c. to 90c.; small flake, 55c. to 57c.; 1919, large, April, $1.30; small, October, 1916, $1.65.

1927

Per pound

	Large. H.	Large. L.	Small. H.	Small. L.
January	$0.52	$0.50	$0.40	$0.40
February	.53	.52	.40	.40
March	.53	.53	.40	.40
April	.53	.53	.40	.40
May	.65	.53	.46	.40
June	.65	.62	.50	.45
July	.65	.65	.55	.50
August	.75	.70	.60	.55
September	.85	.78	.65	.60
October	.85	.70	.65	.60
November	.70	.65	.60	.55
December	.65	.65	.55	.55
Year	.85	.50	.65	.40

1928

Per pound

	Large. H.	Large. L.	Small. H.	Small. L.
January	$0.65	$0.65	$0.55	$0.55
February	.65	.65	.55	.55
March	.65	.65	.55	.55
April	.65	.65	.55	.55
May	.65	.65	.55	.55
June	.65	.65	.52	.50
July	.65	.65	.50	.48
August	.65	.65	.48	.48
September	.65	.65	.48	.48
October	.65	.65	.48	.48
November	.75	.65	.55	.48
December	.70	.70	.50	.50
Year	.75	.65	.55	.48

Nux Vomica, Buttons

November 22, 1871, the price for powder was 18c. to 21c.; October 18, 1881, 2½c.; 1891, 3¼c. to 4½c.; 1901, 2¾c. to 3c.; 1911, 2½c. to 3c.; 1913, 2¾c. to 3c.; 1920, June, 18c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.05¼	$0.05¼	$0.05	$0.05
February	.05¼	.05¼	.05	.05
March	.05¼	.05¼	.05	.05
April	.05¼	.05¼	.05	.05
May	.05¼	.05¼	.05	.05
June	.05¼	.05¼	.05	.05
July	.05¼	.05¼	.05	.05
August	.05¼	.05¼	.05	.05
September	.05¼	.05¼	.05	.05
October	.05¼	.05¼	.05	.05
November	.05¼	.05	.05	.05
December	.05	.05	.05	.05
Year	.05¼	.05	.05	.05

Tamarinds

July 20, 1881, the price was $1.75; October 18, 1881, $2; 1901, $2.05 to $2.25; 1911, $2.50 to $2.75; 1913, $2.45 to $2.50; 1919, November, $7.

Per keg

	1927. H.	1927. L.	1928. H.	1928. L.
January	$3.75	$3.75	$3.75	$3.75
February	3.75	3.75	3.75	3.75
March	3.75	3.75	3.75	3.75
April	3.75	3.75	3.75	3.75
May	3.75	3.75	3.75	3.75
June	3.75	3.75	3.75	3.75
July	3.75	3.75	3.75	3.75
August	3.75	3.75	3.75	3.75
September	3.75	3.75	3.75	3.75
October	3.75	3.75	3.75	3.75
November	3.75	3.75	3.75	3.75
December	3.75	3.75	3.75	3.75
Year	3.75	3.75	3.75	3.75

Roots

Aconite, U.S.P.

February 25, 1874, the price was 14c.; October 18, 1881, 10c. to 12c.; 1891, 13c. to 15c.; 1901, 13c. to 14c.; 1911, 10½c. to 11c.; 1913, 3c. to 15c.; 1919, December, 90c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.23	$0.22	$0.23	$0.23
February	.24	.24	.23	.23
March	.24	.23	.22	.22
April	.23	.23	.22	.22
May	.23	.22½	.22	.20
June	.22½	.22½	.20	.20
July	.24	.22½	.20	.20
August	.24	.23	.20	.20
September	.23	.23	.21	.20
October	.23	.23	.21	.21
November	.23	.23	.21	.21
December	.23	.23	.21	.21
Year	.24	.22	.23	.20

Aletris

January 12, 1881, the price was 35c. to 40c.; October 18, 1881, 35c. to 40c.; 1901, 16c.; 1911, 20c. to 22c.; 1913, 20c. to 21c.; 1920, March, $1.25.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.44	$0.44	$0.40	$0.40
February	.44	.42	.40	.40
March	.42	.42	.40	.40
April	.42	.42	.40	.40
May	.42	.38	.38	.38
June	.38	.37	.37	.36
July	.37	.37	.36	.36
August	.40	.38	.36	.36
September	.40	.40	.38	.36
October	.40	.40	.37	.36
November	.40	.40	.37	.37
December	.40	.40	.37	.37
Year	.44	.37	.40	.36

Belladonna

December 22, 1875, the price was 18c.; October 18, 1881, 10c. to 12c.; 1891, 6c. to 12c.; 1901, 10c. to 11c.; 1911, 10½c. to 11c.; 1913, 9c. to 10c.; 1917, December, $4.50.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.18	$0.17	$0.19	$0.19
February	.18	.17	.19	.19
March	.18½	.18	.21	.21
April	.19	.18	.21	.20
May	.19	.19	.20	.20
June	.19	.19	.20	.20
July	.19	.18½	.20	.20
August	.18	.18	.20	.20
September	.19½	.18	.20	.19
October	.19½	.19½	.19	.19
November	.19½	.19	.19	.19
December	.19	.19	.19	.19
Year	.19½	.17	.21	.19

Blood

April 28, 1875, the price of crushed was 10c.; October 18, 1881, 6c. to 6½c.; 1891, 4½c. to 6c.; 1901, 5c. to 6c.; 1911, 8c. to 8½c.; 1913, 8½c. to 9c.; 1918, November, 80c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13½	$0.13	$0.23	$0.22
February	.13½	.13½	.24	.23
March	.13½	.13½	.27	.24
April	.13½	.13½	.34	.28
May	.13½	.13½	.34	.19½
June	.13½	.13½	.20	.19½
July	.13½	.13½	.19½	.18
August	.15	.13½	.18	.17½
September	.16	.15	.18	.17
October	.16	.16	.17½	.17½
November	.21	.18	.17½	.17½
December	.21	.21	.17½	.17½
Year	.21	.13	.34	.17

Colombo

November 22, 1871, the price was 13c. to 14c.; October 18, 1881, 9½c. to 10c.; 1891, 5c. to 10c.; 1901, 8c. to 12c.; 1911, 8c. to 10c.; 1913, 6c. to 7c.; 1918, September, 30c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.03½	$0.03½	$0.05½	$0.05
February	.05	.05	.05	.05
March	.05	.05	.09½	.05
April	.05	.05	.09½	.09
May	.05	.05	.10	.09
June	.05	.05	.10	.10
July	.05	.05	.10	.10
August	.05	.05	.10	.10
September	.05	.05	.12	.10
October	.05	.05	.12	.12
November	.05	.05	.20	.20
December	.05	.05	.20	.20
Year	.05	.03½	.20	.05

Gentian

November 22, 1871, the price was 5½c. to 6c.; October 18, 1881, 4½c. to 4¾c.; 1891, 3¾c. to 4½c.; 1901, 4c. to 4½c.; 1911, 6c. to 6½c.; 1913, 6½c. to 6¾c.; 1918, November, 18c.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$0.06¾	$0.09	$0.09
February	.08½	.08	.09	.09
March	.08½	.08½	.09	.09
April	.08½	.08½	.09	.09
May	.08½	.08½	.09	.09
June	.08½	.08½	.09	.09
July	.08½	.08½	.09	.09
August	.08	.08	.09	.09
September	.09	.08	.09½	.09½
October	.09	.09	.09	.09
November	.09	.09	.09	.09
December	.09	.09	.09	.09
Year	.09	.06¾	.09½	.09

Golden Seal

February 25, 1874, the price was 14c.; October 18, 1881, 15c. to 16c.; 1891, 24c. to 26c.; 1901, 55c. to 60c.; 1911, $5.25 to $5.50; 1913, $4.90 to $5; 1917, April, $5.75.

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$4.75	$4.75	$3.75	$3.75
February	4.75	4.75	3.75	3.75
March	4.75	4.70	3.75	3.75
April	4.70	4.65	4.05	3.75
May	4.65	4.65	4.05	4.05
June	4.65	4.60	4.05	4.05
July	4.60	4.55	4.05	4.05
August	4.55	4.50	4.00	4.00
September	4.50	4.50	3.90	3.90
October	4.50	4.50	3.90	3.75
November	4.50	4.25	3.50	3.50
December	4.25	3.75	3.50	3.25
Year	4.75	3.75	4.05	3.25

Seventeen Years' Prices

	Per pound H.	L.
1928	$4.05	$3.25
1927	4.75	3.75
1926	5.70	4.50
1925	5.00	3.55
1924	3.70	3.40
1923	3.65	3.20
1922	3.60	3.00
1921	5.00	3.10
1920	6.50	4.85
1919	6.00	5.25
1918	5.35	4.90
1917	5.75	5.00
1916	5.50	4.25
1915	4.85	4.20
1914	4.90	4.20
1913	5.00	3.90
1912	5.25	4.00

Hellebore, White, Powdered

May 28, 1875, the price was 15c.; October 18, 1881, whole, 6c. to 7c.; 1891, 8c. to 12c.; 1901, 7c. to 7½c.; 1911, 7½c. to 8c.; 1913, 10c. to 11c.; 1918, February, 24c.

	1927. H.	L.	1928. H.	L.
January	$0.09½	$0.09½	$0.11	$0.11
February	.09½	.09½	.11	.11
March	.09½	.09½	.11	.11
April	.09½	.09½	.11	.11
May	.09½	.09½	.11	.11
June	.12	.09½	.11	.11
July	.13	.12	.11	.11
August	.13	.12	.11	.11
September	.12	.12	.11	.11
October	.12	.12	.11	.11
November	.12	.12	.11	.11
December	.12	.12	.11	.11
Year	.13	.09½	.11	.11

Ipecac, Cartagena

October 18, 1871, the price of Rio was $1.27½; 1881, $1.10 to $1.15; 1891, $2 to $2.15; 1901, $2.70 to $2.80; 1911, $2.25 to $2.30; 1913, $2.10; 1918, November, $4.75.

	1927. H.	L.	1928. H.	L.
January	$3.60	$3.25	$3.15	$3.05
February	3.60	3.25	3.05	3.05
March	3.10	3.10	2.90	2.90
April	3.10	3.10	2.90	2.45
May	3.10	3.10	2.45	2.15
June	3.10	3.00	2.35	2.35
July	3.00	2.75	2.50	2.35
August	2.75	2.75	2.70	2.50
September	2.75	2.75	2.70	2.70
October	3.25	2.75	2.65	2.65
November	3.25	3.25	2.65	2.50
December	3.45	3.45	2.65	2.45
Year	3.60	2.75	3.15	2.35

Ipecac, Rio

October 18, 1871, the price of Rio was $1.27½; 1881, $1.10 to $1.15; 1891, $2 to $2.15; 1901, $2.70 to $2.80; 1911, $2.25 to $2.30; 1913, $2.10; 1918, November, $4.75.

	1927. H.	L.	1928. H.	L.
January	$3.60	$3.35	$3.40	$3.30
February	3.60	3.60	3.30	3.30
March	3.60	3.60	3.15	3.15
April	3.60	3.60	3.15	3.15
May	3.60	3.60	3.15	3.10
June	No stocks		2.80	2.80
July	3.10	3.10	2.80	2.80
August	3.00	2.85	2.80	2.80
September	3.00	2.85	2.80	2.75
October	3.45	3.00	2.70	2.70
November	3.45	3.45	2.70	2.70
December	3.45	3.45	2.70	2.70
Year	3.60	2.85	3.40	2.70

Rio, Eighteen Years' Prices

	Per pound H.	L.
1928	$3.40	$2.70
1927	3.60	3.10
1926	4.50	3.00
1925	2.35	1.95
1924	2.35	1.80
1923	2.00	1.55
1922	1.90	1.35
1921	2.50	1.35
1920	3.50	2.50
1919	4.00	2.50
1918	4.75	3.00
1917	3.10	2.00
1916	2.65	2.55
1915	5.50	1.70
1914	2.00	1.42½
1913	2.20	1.75
1912	2.35	1.45
1911	2.30	1.75

Jalap

October 18, 1871, the price was 40c.; 1881, 18c. to 20c.; 1891, 50c. to 52½c.; 1901, 12c. to 14c.; 1911, 33c. to 35c.; 1913, 15c. to 16c.; 1919, August, 80c.

	1927. H.	L.	1928. —U.S.P.— H.	L.
January	$0.20	$0.20	$0.16	$0.16
February	.18	.18	.16	.16
March	.18	.18	.16	.16
April	.18	.18	.16	.16
May	.18	.18	.19	.16
June	.17	.16	.20	.19
July	.16	.16	.20	.20
August	.16	.16	.20	.20
September	.16	.16	.19	.18
October	.16	.15	.19	.19
November	.15	.15	.19	.19*
December	.15	.15	.20	.16
Year	.20	.15	.20	.16

* Stocks exhausted.

Eighteen Years' Prices

	Per pound H.	L.
1928	$0.20	$0.16
1927	.20	.15
1926	.24	.20
1925	.29	.25
1924	.38	.29
1923	.34	.30
1922	.34	.13
1921	.35	.13
1920	.80	.35
1919	.80	.50
1918	.62	.47
1917	.50	.12
1916	.12	.08¾
1915	.10	.08
1914	.20	.10
1913	.22	.13
1912	.26	.22
1911	.40	.36

Licorice

November 22, 1871, the price was 8c.; October 18, 1881, 5c. to 6c.; 1891, 3½c. to 5c.; 1901, 3¾c. to 4c.; 1911, 4c. to 4½c.; 1913, 4½c. to 5½c.; 1918, May, 34c.

	1927. H.	L.	1928. H.	L.
January	$0.05½	$0.05½	$0.05½	$0.05½
February	.05½	.05½	.05½	.05½
March	.05½	.05½	.05½	.05½
April	.05½	.05½	.05½	.05½
May	.05½	.05½	.05½	.05½
June	.05½	.05½	.05½	.05½
July	.05½	.05½	.05½	.05½
August	.05½	.05½	.05½	.05½
September	.05½	.05½	.06¾	.05½
October	.05½	.05½	.06	.06
November	.05½	.05½	.06	.06
December	.05½	.05½	.06	.06
Year	.05½	.05½	.06¾	.05½

Mandrake

April 14, 1875, the price was 5c. to 7c.; October 18, 1881, 5c. to 6c.; 1891, 3¾c. to 4¼c.; 1901, 4c. to 5c.; 1911, 6c. to 6½c.; 1913, 7c. to 7½c.; 1920, February, 42c.

	1927. H.	L.	1928. H.	L.
January	$0.12	$0.12	$0.15	$0.15
February	.12	.12	.16	.15
March	.12	.12	.16	.16
April	.12	.12	.16	.16
May	.12	.12	.16	.16
June	.12	.12	.16	.15
July	.13	.12	.15	.15
August	.14	.13	.15	.14
September	.14	.13	.13	.13
October	.14	.14	.13	.12
November	.14	.14	.12	.10½
December	.15	.14	.11	.09½
Year	.15	.12	.16	.09½

Orris, Florentine

November 22, 1871, the price was 15c. to 16c.; October 18, 1881, 15c. to 19c.; 1891, 35c. to 40c.; 1901, 9c. to 11½c.; 1911, 9½c. to 10c.; 1913, 15½c. to 16½c.; 1918, October, 29c.

	1927. H.	L.	1928. H.	L.
January	$0.09	$0.09	$0.09½	$0.09½
February	.09	.09	.10	.09½
March	.09	.09	.10	.10
April	.09	.09	.10	.10
May	.09	.08½	.10	.10
June	.08½	.08½	.10	.10
July	.08½	.08½	.12½	.10
August	.08½	.08½	.12½	.12½
September	.08½	.08½	.13½	.13
October	.09½	.09½	.13½	.13½
November	.09½	.09½	.13½	.14
December	.09½	.09½	.20	.18
Year	.09½	.08½	.20	.09½

Orris, Verona

January 17, 1872, the price was 14c.; October 18, 1881, 8c. to 10c.; 1891, 14c. to 17c.; 1901, 4c. to 6c.; 1911, 9c. to 9½c.; 1913, 13½c. to 14½c.; 1918, November, 28c.

	1927. H.	L.	1928. H.	L.
January	$0.08	$0.08	$0.09	$0.08½
February	.08	.08	.09	.09
March	.08	.08	.09	.09
April	.08	.08	.09	.09
May	.08¾	.08	.10	.10
June	.08	.08	.10	.10
July	.08	.08	.11½	.10
August	.08	.08	.11½	.11½
September	.08	.08	.12½	.11½
October	.08½	.08½	.12½	.12½
November	.08½	.08½	.13	.12½
December	.08½	.08½	.14	.13
Year	.08¾	.08	.14	.08½

Rhubarb, High Dried

October 18, 1871, the price was 55c.; 1881, 18c. to $1; 1890, 30c. to 70c.; 1901, 17½c. to 25c.; 1911, 16c. to 17c.; 1913, 16c. to 17c.; 1919, December, $1.90.

	1927. H.	L.	1928. H.	L.
January	$0.55	$0.55	$0.35	$0.35
February	.52	.50	.35	.35
March	.50	.45	.35	.35
April	.51	.47	.38	.35
May	.53	.53	.40	.39
June	.53	.46½	.39	.39
July	.46½	.46½	.39	.39
August	.46½	.45	.39	.39
September	.45	.42	.40	.39
October	.42	.40	.40	.40
November	.43	.40	.40	.36
December	.43	.35	.39	.36
Year	.55	.35	.40	.35

Sarsaparilla, Mexican

October 18, 1871, the price was 17c.; 1881, 9¾c. to 10½c.; 1891, 14c. to 15c.; 1901, 7c. to 7¼c.; 1911, 16c.; 1913, 18c. to 19c.; 1918, March, 70c.

	1927. H.	L.	1928. H.	L.
January	$0.40	$0.40	$0.21	$0.21
February	.40	.40	.21	.21
March	.36	.36	.23	.21
April	.36	.34	.22	.22
May	.34	.31	.22	.22
June	.30	.30	.20	.20
July	.30	.26	.20	.20
August	.26	.25	.20	.20
September	.25	.25	.20	.20
October	.25	.25	.20	.19
November	.25	.22	.20	.20
December	.21	.21	.30	.20
Year	.40	.21	.30	.19

Nineteen Years' Prices

	Per pound H.	L.
1928	$0.30	$0.19
1927	.40	.21
1926	.45	.30
1925	.35	.19
1924	.30	.18
1923	.35	.22
1922	.45	.23
1921	.43	.38
1920	.47	.36
1919	.55	.30
1918	.70	.32
1917	.60	.13½
1916	.13	.10½
1915	.15	.09
1914	.50	.10
1913	.28	.14
1912	.19	.11
1911	.18½	.09
1910	.11	.08¾

Senega

October 18, 1871, the price was $1.60; 1881, 57½c. to 60c.; 1891, 40c.; 1901, 57c.; 1911, 55c. to 57½c.; 1913, 66c. to 68c.; 1920, January, $2.50.

	1927. H.	L.	1928. H.	L.
January	$0.75	$0.72	$1.28	$1.27
February	.80	.75	1.28	1.28
March	.80	.80	1.30	1.30
April	.83	.80	1.30	1.30
May	.83	.83	1.30	1.30
June	.83	.80	1.30	1.30
July	1.10	.80	1.28	1.10
August	1.15	1.10	1.20	1.20
September	1.25	1.20	1.20	1.20
October	1.27	1.25	1.25	1.20
November	1.28	1.27	1.25	1.25
December	1.27	1.27	1.25	1.25
Year	1.28	.72	1.30	1.10

Nineteen Years' Prices

	Per pound H.	L.
1928	$1.30	$1.10
1927	1.28	.72
1926	.75	.58
1925	.68	.50
1924	.65	.53
1923	.75	.60
1922	1.10	.74
1921	.90	.60
1920	2.50	.90
1919	2.40	.90
1918	1.05	.80
1917	.85	.60
1916	.68	.40
1915	.45	.35
1914	.50	.38
1913	.80	.63
1912	.65	.59
1911	.60	.42
1910	.60	.42

Squills, White

November 22, 1871, the price was 6c. to 6½c.; October 18, 1881, 6c. to 7c.; 1891, 5½c. to 7½c.; 1901, 3¾c. to 4c.; 1911, 3¾c. to 5c.; 1913, 6c. to 8c.; 1918, November, 16c.

	1927. H.	L.	1928. H.	L.
January	$0.05½	$0.05	$0.09	$0.08
February	.05½	.05½	.12	.12
March	.05½	.05½	.14	.12
April	.05½	.05½	.14	.14
May	.05½	.05½	.16	.14
June	.05½	.05½	.16	.16
July	.05½	.05½	.16	.11
August	.05½	.05½	.16	.16
September	.05½	.04½	.16	.10
October	.04½	.04½	.10	.09
November	.07½	.04½	.09	.09
December	.07½	.07½	.09	.09
Year	.07½	.04½	.16	.09

Valerian, U.S.P.

November 22, 1871, the price was 20c. to 35c.; October 18, 1881, German, 12 to 13½c.; 1891, 7½c. to 8c.; 1901, 5½c. to 6c.; 1911, 13c. to 13½c.; 1913, 9½c. to 10c.; 1919, January, $1.65.

	1927. H.	L.	1928. H.	L.
January	$0.27	$0.27	$0.17	$0.17
February	.30	.30	.17	.17
March	.28	.28	.17	.16
April	.28	.28	.16	.16
May	.28	.27	.16	.16
June	.25	.21	.14	.14
July	.21	.21	.14	.14
August	.21	.20	.14	.14
September	.21	.20	.17	.14
October	.21	.21	.23	.17
November	.21	.18	.24	.23
December	.18	.17	.24	.24
Year	.30	.17	.24	.14

Seeds

Anise, Spanish

November 22, 1871, the price of German was 14c.; October 18, 1881, 9c. to 10c.; 1894, German, 5½c. to 7c.; 1901, Russian, 5½c. to 6c.; 1911, Spanish, 8¼c. to 9c.; 1913, 8½c. to 9½c.; 1917, February, 30c.

	1927. H.	L.	1928. H.	L.
January	$0.13	$0.13	$0.14¼	$0.14¼
February	.13¼	.13¼	.15½	.15
March	.15	.13¼	.15¾	.15½
April	.16	.15	.15¾	.15
May	.15½	.14¾	.15	.14¼
June	.15	.15	.14¼	.14¼
July	.15	.14¾	.15	.14¾
August	.14¾	.14¼	.15½	.15
September	.14½	.14	.16	.16
October	.14	.14	.17	.17
November	.14	.14	.18	.17
December	.14½	.14	.17½	.17½
Year	.16	.13	.18	.14¼

Canary, Argentine

June 12, 1871, the price of Spanish seed was 3½c.; October 18, 1881, 4c. to 4¼c.; 1891, 2½c. to 2¾c.; 1901, Smyrna, 2¾c. to 2¾c.; 1911, Smyrna, 3½c. to 3¾c.; 1913, Smyrna, 5½c. to 5¾c.; 1918, September, Spanish, 25c.; 1920, nominal; 1921, nominal. On May 28, 1906, the price of South American seed was 4c.; October 18, 1911, 3¼c. to 3¾c.; 1913, 5½c. to 5¾c.; 1918, September, 25c.

	1927. H.	L.	1928. H.	L.
January	$0.04½	$0.04½	$0.04¼	$0.04¼
February	.04¾	.04½	.04¼	.04¼
March	.04¾	.04¾	.04½	.04¼
April	.04¾	.04½	.04¾	.04⅝
May	.04½	.04	.04¾	.04½
June	.04½	.04¼	.04¾	.04¾
July	.04½	.04½	.04¾	.04¾
August	.04½	.04⅝	.04¾	.04¾
September	.04½	.04½	.04¾	.04½
October	.04⅝	.04⅜	.04¾	.04¾
November	.04⅝	.04⅜	.04¾	.04¾
December	.04¼	.04¼	.04¾	.04¾
Year	.04⅝	.04	.04¾	.04¼

Caraway, Dutch

October 18, 1871, the price was 11½c.; 1881, Dutch, 6c. to 7c.; 1891, 5c. to 5¼c.; 1901, Dutch, 5½c. to 6c.; 1911, Dutch, 6½c. to 7c.; 1913, 7c. to 7½c.; 1918, November, 69c.

	1927. H.	L.	1928. H.	L.
January	$0.10¼	$0.09¾	$0.09½	$0.09½
February	.09¾	.09¾	.09½	.09⅝
March	.09¼	.08½	.09½	.09⅝
April	.09½	.08½	.09½	.09½
May	.09¾	.08½	.09¼	.09½
June	.09½	.09¼	.09½	.09½
July	.09	.08½	.09½	.09
August	.08½	.08¼	.09¼	.09
September	.08¾	.08	.09¼	.09
October	.09⅝	.09¼	.09⅝	.09¼
November	.09½	.09	.10	.09⅝
December	.09½	.09¼	.10	.09¾
Year	.10¼	.08	.10	.09

Eighteen Years' Prices

	Per pound H.	L.
1928	$0.10	$0.09
1927	.10¼	.08
1926	.11	.06
1925	.10¼	.06½
1924	.24	.09½
1923	.28½	.16½
1922	.13	.07½
1921	.09	.06¼
1920	.12	.09
1919	.52	.52
1918	.69	.52
1917	.65	.52
1916	.51	.10¾
1915	.13½	.08½
1914	.15	.07
1913	.07¼	.05¾
1912	.08	.05⅝
1911	.06½	.05

Cardamom, Bleached

October 18, 1871, the price was $2.80 to $2.85; 1881, $2 to $2.25; 1891, 60c. to 80c.; 1901, 55c. to 85c.; 1911, 62c. to $1.25; 1913, $1.25 to $1.75; 1919, December, $2.

	1927. H.	L.	1928. H.	L.
January	$2.00	$2.00	$1.40	$1.40
February	2.00	1.75	1.40	1.30
March	1.75	1.75	1.30	1.30
April	1.75	1.60	1.30	1.30
May	1.60	1.60	1.30	1.30
June	1.60	1.50	1.30	1.20
July	1.50	1.45	1.20	1.20
August	1.45	1.45	1.20	1.20
September	1.45	1.45	1.20	1.20
October	1.40	1.40	1.20	1.20
November	1.40	1.40	1.20	1.20
December	1.40	1.40	1.20	1.20
Year	2.00	1.40	1.40	1.20

Celery

October 7, 1879, the price was 15c. to 16c.; October 18, 1881, 12½c. to 14c.; 1891, 17c.; 1901, 7½c. to 8c.; 1911, 20c. to 23c.; 1913, 12c. to 13c.; 1918, October, 70c.

	1927. H.	L.	1928. H.	L.
January	$0.19⅜	$0.19½	$0.15¼	$0.15
February	.20¼	.20	.18½	.16¾
March	.20	.20	.21	.19¼
April	.20½	.19½	.20¾	.19
May	.19½	.18¾	.19¼	.18¾
June	.19¼	.19½	.19	.18½
July	.20¼	.19¾	.19	.18½
August	.20½	.20¾	.20	.18½
September	.20¼	.19½	.20	.19¼
October	.19¼	.18½	.19¼	.19
November	.18	.17½	.19	.19
December	.16½	.16	.19	.17¼
Year	.20½	.16	.21	.15

Seventeen Years' Prices

	Per pound H.	L.
1928	$0.21	$0.15
1927	.20½	.16
1926	.23½	.15½
1925	.35½	.24
1924	.33	.24½
1923	.30	.19¼
1922	.23½	.13
1921	.15	.12
1920	.32	.15
1919	.55	.32
1918	.70	.26½
1917	.30	.18
1916	.30	.18¼
1915	.35	.14
1914	.40	.14
1913	.45	.12
1912	.30	.15

Coriander, Bleached

October 18, 1871, the price was 9c.; 1881, 5c. to 6c.; 1891, 3¼c. to 4c.; 1901, 3c. to 3½c.; 1911, 3¾c. to 4c.; 1913, 6¼c. to $1.25; 1917, June, 25½c.

	1927. H.	L.	1928. H.	L.
January	$0.09	$0.09	$0.17	$0.16
February	.13½	.09½	.18	.18
March	.15½	.15½	.18	.18
April	.16	.15½	.18	.18
May	.15½	.15	.18	.17⅛
June	.15	.15	.17½	.17
July	.16	.15	.17	.15
August	.17	.16	.16	.11½
September	.16	.16	.11½	.11½
October	.16	.15½	.11½	.11
November	.15½	.15½	.11	.11
December	.16	.15½	.11	.10½
Year	.17	.09	.18	.10½

Fenugreek

November 22, 1871, the price for powdered seed was 6c. to 7c.; October 18, 1881, whole seed, 3½c. to 4c.; 1891, 2½c. to 2¾c.; 1901, 1¾c. to 2c.; 1911, 2½c. to 2¾c.; 1913, 3c. to 3½c.; 1918, May, 15c.

	1927. H.	L.	1928. H.	L.
January	$0.05	$0.05	$0.05	$0.05
February	.05	.04½	.05	.05
March	.04½	.04½	.05	.05
April	.04½	.04½	.05	.05
May	.05	.04½	.05	.04⅜
June	.05	.05	.04¾	.04½
July	.05	.05	.04½	.04½
August	.05	.05	.04½	.04½
September	.05	.04½	.04½	.04½
October	.04½	.04⅜	.04½	.04½
November	.05	.05	.04½	.04½
December	.05	.05	.04½	.04½
Year	.05	.04½	.05	.04½

Mustard, California, Brown

October 18, 1871, the price was 13c. to 15c.; 1881, 6c.; 1891, 4¾c. to 5c.; 1901, 4½c. to 5c.; 1911 6¼c. to 6½c.; 1913, 4¾c. to 5c.; 1918, November, 31c.

	1927. H.	L.	1928. H.	L.
January	$0.08¾	$0.08¾	$0.07¼	$0.07¼
February	.08¾	.08½	.07¼	.07¼
March	.08½	.08¼	.07¼	.07¼
April	.08¼	.08	.07½	.07¼
May	.08	.07¼	.10	.08
June	.07½	.07½	.10	.10
July	.07½	.07½	.10¼	.10
August	.07½	.07½	.10¼	.08¾
September	.07½	.07½	.10¼	.10
October	.07½	.07½	.11½	.10½
November	.07½	.07½	.11½	.11½
December	.07¼	.07¼	.11½	.11½
Year	.08¾	.07¼	.11½	.07¼

Worm, American

April 2, 1878, the price of powder was 12c. to 15c.; October 18, 1881, whole, 5c. to 6c.; 1901, 9½c. to 10c.; 1911, 6c. to 7c.; 1913, 10c. to 11c.; 1920, August, 30c.

	1927. H.	L.	1928. H.	L.
January	$0.17	$0.17	$0.15	$0.15
February	.17	.17	.15	.14
March	.17	.17	.14	.14
April	.17	.17	.14	.14
May	.15	.15	.14	.14
June	.15	.15	.14	.14
July	.15	.15	.14	.14
August	.15	.15	.14	.14
September	.15	.15	.14	.14
October	.15	.15	.14	.11½
November	.15	.15	.11½	.11½
December	.15	.15	.11½	.11½
Year	.17	.15	.15	.11½

(Continued on page 94)

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Essential Oils: Market Review

Price trend in the market for essential oils during 1928 was mostly upward. Following years of price depression, notably so in 1927, the market reached a stronger position following the development of more sturdy undertones and a rise in values that was closely allied with production in primary markets and consumption in the United States. An indication of price trend is shown in a study of net changes covering 100 essential oils, comparing prices January 1 with those quoted December 31. The study revealed 53 advances, 19 reductions and 28 showing no net change at all. The upward tendency in prices is also revealed in the Reporter's index number comparisons, which follow:—

Comparative Values

Oil, Paint and Drug Reporter index numbers, based on 100 as the average price for twenty essential oils August 1, 1914, ranged as follows by quarters over 1927:—

Jan. 1.	April 1.	July 1.	Oct. 1.	Dec. 31.
132.7	138.8	170.4	164	189.4

In point of volume, business was quite satisfactory throughout the year. While there were the usual periods of quiet demand, these were checked against enlargement of consuming requirements during the also normal periods of best sales.

An important factor in the market was the close adjustment of stocks to the probable requirements of buyers. Marked refusal to stock heavily was a part of the sales policy of most of the larger importers. They refused to protect the requirements of buyers beyond a very conservative future in those instances where the buyers refused themselves so to protect their needs.

The result was that, when the end of the year came, inventories failed to show excessive stocks that would ordinarily forecast price reductions in an effort to reduce the inventories.

In point of fact, the market appeared to be stable in most respects, free from all signs of important weakness, actual or potential, and so placed that in all probability the satisfactory improvement in business during 1928 would carry over into the new year.

For purposes of reviewing the market during 1928, it has been divided into four sections, namely, domestic, French, Italian, and miscellaneous oils.

Domestic Oils

Production of domestic essential oils failed to exceed a volume close to being normal. None of them, save wormseed, displayed elements of weakness that might be attributable to overproduction. Whenever such weakness did develop, it seemed to be connected with questions of demand rather than surplus production.

Peppermint and spearmint went through their usual period of uncertainty, rumor, allegation, and general lack of specific and reliable information obtained direct from the producing districts. The outlook in peppermint early in the crop year was said to be highly favorable. Such reports were followed by others cutting down the probable production. Finally came a period in which no information was offered at all. To judge by the movement of prices, it is unlikely that the crop went beyond 800,000 pounds, and in all probability it was between 650,000 and 750,000 pounds.

It was marketed under somewhat interesting conditions. One of the largest dealers and producers established a price basis to the farmers that appeared to be high, based on crop expectancy. Large quantities were bought for the account of the chewing gum makers on the basis of such figures. The buying had a tendency to stabilize the market. While many in the East predicted a break in prices once such demand had been taken care of, the predicted break never came. In fact, with the approach of the end of the year the market was, if anything, somewhat stronger than it had been.

A stabilization had been aimed at—with a view to keeping production to a normal amount—then the operations of the primary market last year were highly successful. Prices on spot began the year at $3.30 per pound for natural, declined to $3.20 in April, reached $3.10 in July, thereby touching the bottom of the market for the year. That figure continued until August, when recovery came to the basis of $3.20. In November, the market was up to $3.35 and continued thereat to the end of the year, ending the twelvemonth at the highest price paid during the entire period.

Conditions in spearmint were less complicated. It was apparent early in the growing year that the production would not be excessive and that conditions would not favor weakness in prices. Spot quotations were steady at $3.25 per pound from January until April, when $4.20 became the market. In July the quotations were back to $4.25. In September the high point for the year was reached at $4.35. Reaction to $4.30 came in October, and that figure ruled to the end of the period.

Wormwood oil was a very strong feature. None had been produced in 1927 and little if any was made in 1928. The result was an almost total exhaustion of stocks and a price position that was clearly nominal. Quotations in January were $11.50 per pound, a price caused by the scarcity in 1927. By July the market was up to $16, and it was very hard to obtain anything at any price. By the end of the year $25 had been paid, and even higher was said to have been done.

Cedarwood was a satisfactory article most of the year, demand being good. Primary market producers settled difficulties that at one time brought a trade war and a basis of prices that made nothing but losses for all concerned. Conditions in the last part of the year were highly satisfactory. Production was then well sold ahead and as the year came to an end it proved to be very difficult to place substantial orders even for the future. Price tendency in December was strongly upward. Quotations during the year were high at 27c. per pound in January and were 26c. in July and December.

Tansy and pennyroyal were produced in fair quantities and when new crop was ready the market was reduced locally, though it also assumed a very firm basis following the reduction. Quotations for tansy were $4.25 in January, $4.15 in July, and $4 in December. For pennyroyal, they were $2 per pound in January, $1.85 in July, and at the same figure at the close of the year.

Erigeron was subject to a sharp break in prices. With $2.25 per pound being paid in January, the market was down to $1.85 by midyear and thereafter a fairly stable condition prevailed at that figure.

Wormseed was the weakest of the domestic oils. Production was excellent and showed a favorable cost. The carryover was ample, a contributing factor in the general weakness evident in the second part of the year. Demand was also very sluggish and even when the primary market reached bottom, the consuming demand needed to bring prices to a more profitable basis was lacking. In all respects it was a buyers' market most of the year. The high for the year was $3.35 per pound, paid in January. The low was $1.90, named in November and ruling at the end of December. Between the two extremes there were a series of prices that each month showed a downward revision.

Discussion of domestic lemon and orange oils is deferred for treatment with the Messina oils.

Lemon year opened at $2.35 per pound in January, but before the end of the month sold for $2.75. During February and March business was done between $2.60 and $2.65 per pound. April found prices as low as $2.45, but severity of demand forced advanced to as high as $3 before the end of the period. May, June and July found prices mounting from $3 to $3.50 per pound and the same strong turn continued the movement into August when $4 was done. Reaction was the keynote to the beginning of November and the market during that period fell as low as $3.75. By the end of the month it was up to $4.35. The high point for the year was reached then and was also effective in December.

Italian Oils

Trend of prices for lemon and orange oils was strongly upward. The basic cause for the advance was underproduction abroad. That condition was emphasized by the degree to which some importers speculated in the article while others failed to buy sufficient oil to cover requirements. It must be said that the latter policy was due almost entirely to the fact that many manufacturing consumers lacked faith in the market and refused to buy liberally enough, believing in lower prices. Both articles were in moderate spot supply almost always throughout the year.

Underproduction of orange oil in 1927 was the basic cause for an almost sensational advance in Messina oil prices in 1928. The market was short of material during the first six months of the year. The shortage in California oil was also a strong factor in putting the market to a high and almost nominal basis. The demand for domestic oil was a feature that at times dominated the market to the exclusion of all other affairs. Manufacturing consumers had been so well educated in the use of the California product that when the production dropped sharply buyers were willing to pay almost any figure to obtain the article that at times was all but unobtainable. Quotations for Messina oil advanced from $2.90 per pound in January—being low for the year—to $10 per pound by the end of May. In that month, the market rose from $5 to $10 per pound. Subsequently, with easing off in demand and stoppage of most buying, prices dropped steadily until by the close of the year the market was $5.50 per pound. West Indian oil went from $2.75 per pound in January to $9.50 per pound by the end of May and remained at that figure in June. The decline was to $5 per pound, ruling at the end of the year.

A feature in the citrous oil market toward the end of the year was the possible destruction of lemon groves in the eruption of the volcano Mount Etna in Sicily. It was learned that some losses were sustained, but when the damaged area was compared with the total devoted to cultivation of the lemon tree, it became insignificant. Notwithstanding that, an attempt to "bull" this market came promptly with the press reports of loss of life and property in the Sicilian disaster. Speculators endeavored to put the market up, striving through fear to bring buyers into the market in large volume and put prices up sharply. The attempt died almost as soon as it was born. Buyers refused to be stampeded into the market. Conservative dealers advised buyers against operations at that time and suggested that the losses would be less than had been reported and that a permanently higher market would be most unlikely. At least, such a development would come independent of the eruption of Mount Etna. This calm counsel prevailed and the speculative advances died aborning.

Lime oil was strong throughout the year. Production in the West Indies had been reduced sharply through a plant diseases known as withertip. This decline in production was responsible for the almost total exhaustion of stocks of expressed and so sharp a decline in those of distilled oil as to make for high prices and strong market conditions throughout the year. Expressed oil was priced at $9.50 per pound in January and by October it had worked up to $12 per pound. In November $16 per pound was paid and shortly thereafter stocks became virtually exhausted. The rise in prices for distilled oil was from a low of $5.75 per pound in July, after beginning the year at $6.50, to a high of $7.50 per pound, prevailing at the end of the year.

French Oils

Recovery of strength was a feature in French oils last year. The preceding twelve month had been one of weakness and price declines. In 1928, undertones were generally stronger and prices tended upward much of the time. This tendency was due principally to crop conditions. Production of lavender of the high test variety was said to have been smaller. Likewise, the output of geranium was by no means so ample as it had been and a higher level of values was forced on the market despite the fact that stocks here were generally ample.

Algerian geranium oil advanced from $2.75 per pound in January—the low for the year—to $4 per pound, reached in October. That figure was retained until the close of the year. Turkish and Bourbon oil had a similar price trend.

Lavender flower oil had an irregular trend. High quality oil was more or less strong but there seemed to be an ample supply of low test merchandise that sold for lower prices as the year advanced. Quotations on low test were highest in January when sales were made at $3 per pound. In February, $2.75 per pound became the market and that price ruled until September when $2.60 was named. That price continued for the balance of the year.

Bois de rose underwent a period of advancing prices, caused principally by the increase in demand that came with the exhaustion of primary market stocks of linaloe oil. Later, however, the Brazilian oil eased and then declined in price. The Cayenne oil was strong and failed to reflect the reduced price for Brazilian oil.

Bourbon vetiver was more or less firm throughout the year. While at times there was a slight shading of prices, development of permanently lower levels failed to come. Quotations hovered at and around $6 per pound throughout the year. The severe decline in prices during the previous year had put this article on a fundamentally sound basis.

Miscellaneous Oils

Clove oil closed the year strongly because of a similar position in clove spice, the raw material. The latter article came through with a short crop that was bought up by London speculators and then offered to the world at steadily advancing prices. Competition in oil was current at times but for the most part it was a sellers' market and full prices were obtained. Quotations were low for the year at $1.25 per pound. By May, they had worked up to $1.60 per pound in a strong buying market. In July and August, business was done at $1.80 and at $1.85 per pound. October brought sales at $2.10 per pound and the high for the year was reached at $2.50 in November. That price continued to the end of the year.

Cassia was low at $1.75 per pound in January and was high at $3.40 in June. The last six months of the year were a period of competition and declining prices that eventually brought the article to the basis of $2.05 per pound by the close of the year. Competition was an element in business throughout the year, certain quarters specializing in price cutting and generally disturbing practices that made stabilization of values almost impossible.

Sandalwood was stable most of the year, the market being $7 per pound until November. In that month prices advanced to $7.25 per pound and were at $7.35 per pound by the end of the year. The feature of the market toward the last quarter of the year was shortage in supplies. Agents of the Mysore producers were unable to deliver at all promptly. The spot market became very short of supplies and price advances were the rule. Makers of oil in this country, working from imported sandalwood, were in hardly better shape, and the result was an almost nominal market shortly after the first of the year.

Eucalyptus was stable throughout the period, prices showing a very modest decline that was not indicative of market weakness. Toward the end of the year demand became quite heavy and early in the new year it was strong, due to demand for influenza remedies. Influenza and colds rose to a position close to being epidemic. Patchouli was weak most of the year. Selling at $8 per pound in January, it became rather hard to get $5.75 per pound by the end of the year. Ample production and a reduced cost of the same permitted keen competition to govern the market most of the period.

Prices for sixteen typical essential oils ranged as follows over the year:—

	Jan. 1.	July 1.	Dec. 31.
Bay	$1.75	$1.75	$2.50
Bois de rose, Brazilian	1.85	1.75	1.60
Cananga, native, rectified	4.00	3.65	3.65
Caraway	1.65	1.75	1.70
Cedarwood	.27	.26	.26
Citronella, Ceylon, drums	.34	.44	.44
Coriander	10.00	12.75	10.25
Erigeron	2.25	2.00	1.85
Eucalyptus, drums	.57	.57	.55
Ginger, distilled	4.75	5.50	5.75
Lime, distilled	6.50	5.75	7.50
expressed	9.50	12.00	16.00
Patchouli	8.00	6.35	5.75
Pine needle	.85	.70	.65
Vetiver, Bourbon	6.00	6.00	6.00
Wormwood	11.50	16.00	25.00
Advanced			8
Declined			7
Unchanged			1

Essential Oils: Record of Prices

Almond, Bitter

May 29, 1872, the price was $14; October 18, 1881, $4.50 to $7.50; 1891, $4.50 to $7.25; 1901, $3.50 to $4.25; 1911, $3.50 to $5; 1913, $3.50 to $6.50; 1917, November, $13.

	Per pound— 1927. H.	1927. L.	1928. H.	1928. L.
January	$2.75	$2.75	$2.75	$2.75
February	2.75	2.75	2.75	2.75
March	2.75	2.75	2.75	2.75
April	2.75	2.75	2.75	2.75
May	2.75	2.75	2.75	2.75
June	2.75	2.75	2.75	2.75
July	2.75	2.75	2.75	2.75
August	2.75	2.75	2.75	2.75
September	2.75	2.75	2.75	2.75
October	2.75	2.75	2.75	2.75
November	2.75	2.75	2.75	2.75
December	2.75	2.75	2.75	2.75
Year	2.75	2.75	2.75	2.75

Almond, Artificial, U.S.P.

January 20, 1902, the price was 75c. to $1; October 18, 1911, 48c. to 85c.; 1913, 40c. to 45c.; 1917, January, $5.

(For comparative prices, 1927 and 1928, see Benzaldehyde, Coaltar Products, page 58.)

Bergamot

October 18, 1871, the price was $4.50 to $4.75; 1881, $2.45 to $2.50; 1891, $2.90 to $3.70; 1901, $2.50 to $2.75; 1911, $3; 1913, $6 to $6.50; 1918, September, 7.50.

	Per pound— 1927. H.	1927. L.	1928. H.	1928. L.
January	$7.10	$6.00	$5.50	$5.00
February	6.35	6.00	5.25	5.25
March	6.25	6.15	5.25	5.00
April	6.25	6.15	5.00	4.75
May	6.15	6.00	5.25	5.15
June	6.00	6.00	5.00	5.15
July	6.00	6.00	5.00	5.00
August	6.00	6.00	5.00	5.00
September	5.85	5.85	5.00	5.00
October	5.75	5.25	5.00	5.00
November	5.25	5.25	5.50	5.00
December	5.25	5.00	5.50	5.50
Year	7.10	5.00	5.50	4.75

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Cassia, Redistilled, U.S.P.

February 8, 1909, the price was $1.75 to $1.85; October 18, 1911, $1.25 to $1.40; 1913, $1.30 to $1.40; 1918, November, $3.75.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.00	$1.00	$1.75	$1.75
February	2.00	2.00	2.00	1.85
March	2.00	1.90	2.00	2.00
April	2.00	1.95	2.25	2.00
May	1.95	1.95	3.00	2.30
June	1.95	1.95	3.40	2.70
July	1.95	1.90	2.70	2.70
August	1.90	1.90	2.40	2.35
September	1.90	1.85	2.35	2.15
October	1.85	1.80	2.35	2.30
November	1.85	1.75	2.25	2.20
December	1.75	1.75	2.15	2.05
Year	2.00	1.75	3.40	1.75

Clove, U.S.P.

November 22, 1871, the price was $1.40 to $1.50; October 18, 1881, $1.90 to $2; 1891, 75c. to 77½c.; 1901, 60c. to 62½c.; 1911, 97½c. to $1; 1913, $1.15 to $1.20; 1917, November, $4.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.60	$1.50	$1.35	$1.25
February	1.45	1.40	1.35	1.30
March	1.45	1.40	1.35	1.35
April	1.40	1.40	1.35	1.35
May	1.40	1.35	1.60	1.40
June	1.40	1.40	1.60	1.55
July	1.40	1.40	1.80	1.60
August	1.40	1.40	1.85	1.80
September	1.40	1.40	1.80	1.75
October	1.35	1.30	2.10	1.75
November	1.30	1.30	2.50	2.25
December	1.30	1.25	2.50	2.50
Year	1.60	1.25	2.50	1.25

Geranium, Rose, Algerian

November 22, 1871, the price was $8 to $10; October 18, 1881, $4.50 to $8.50; 1891, $7.50 to $8.50; 1901, $5.25 to $6.50; 1911, $4.25 to $4.50; 1913, $9.50 to $10; 1918, November, $11.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.75	$2.75	$2.75	$2.75
February	2.75	2.75	2.90	2.90
March	2.85	2.75	3.25	2.90
April	2.85	2.85	3.25	3.25
May	3.00	2.75	3.75	3.50
June	3.00	3.00	3.75	3.50
July	3.00	2.85	3.40	3.40
August	2.85	2.85	3.40	3.40
September	2.85	2.85	3.75	3.40
October	2.85	2.85	4.00	3.75
November	2.85	2.85	4.00	4.00
December	2.75	2.75	4.00	4.00
Year	3.00	2.75	4.00	2.75

Lavender Flower, U.S.P.

November 22, 1871, the price was $2.90 to $3; October 18, 1881, $2.10; 1891, $1.30 to $1.75; 1901, $1.20 to $1.30; 1911, $2.25 to $3.25; 1913, $3.75 to $4; 1919, December, $11.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$3.75	$3.50	$3.00	$3.00
February	3.25	3.25	3.00	2.75
March	3.25	3.25	2.75	2.75
April	3.25	3.25	2.75	2.75
May	3.25	3.25	2.75	2.75
June	3.25	3.25	2.75	2.75
July	3.15	3.15	2.75	2.75
August	3.25	3.15	2.75	2.75
September	3.25	3.25	2.75	2.60
October	3.25	3.15	2.60	2.60
November	3.15	3.15	2.60	2.60
December	3.15	3.00	2.60	2.60
Year	3.75	3.00	3.00	2.60

Lemon, Messina

October 18, 1871, the price was $3.75 to $5.12½; 1881, $3 to $3.25; 1891, $2.15 to $2.75; 1901, 85c. to 95c.; 1911, $1.60 to $1.80; 1913, $3.75 to $4; 1920, March, $2.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.35	$2.15	$2.75	$2.35
February	2.65	2.50	2.75	2.65
March	2.75	2.65	2.65	2.60
April	2.70	2.50	3.00	2.45
May	2.40	2.30	3.25	3.00
June	2.30	2.15	3.50	3.35
July	2.15	2.15	3.50	3.40
August	2.15	2.15	4.00	3.80
September	2.15	2.05	3.85	3.75
October	2.30	2.20	3.75	3.75
November	2.20	2.20	4.35	3.75
December	2.25	2.20	4.35	4.00
Year	2.75	2.05	4.35	2.35

Twenty-eight Years' Prices

	Per pound	
	H.	L.
1928	$4.35	$2.35
1927	2.75	2.00
1926	3.25	2.00
1925	2.00	.95
1924	.97½	.70
1923	.80	.65
1922	.87	.63
1921	.95	.65
1920	2.00	.95
1919	1.85	1.05
1918	1.85	.87½
1917	1.20	1.05
1916	1.05	.90
1915	1.25	.95
1914	3.75	1.05
1913	4.75	2.20
1912	2.10	1.30
1911	1.65	.80
1910	.82½	.75
1909	3.00	.72½
1908	1.50	.70
1907	2.00	1.00
1906	1.20	.57
1905	.57½	.55
1904	.55	.50
1903	.70	.55
1902	.80	.65
1901	1.15	.80

Orange, Messina, U.S.P.

April 2, 1873, the price was $3.75; October 18, 1881, $3 to $3.25; 1891, $2.80 to $3.12½; 1901, $1.20 to $1.55; 1911, $2.45 to $2.60; 1913, $3.75 to $4; 1920, June, $11.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.55	$2.40	$3.15	$2.90
February	2.75	2.50	3.15	3.00
March	2.75	2.75	3.00	3.00
April	2.75	2.65	4.15	3.10
May	2.55	2.55	10.00	5.00
June	2.55	2.50	10.00	9.00
July	2.50	2.50	8.50	8.00
August	2.65	2.50	8.00	8.00
September	2.75	2.75	7.75	7.00
October	2.75	2.75	6.00	5.40
November	2.75	2.75	5.50	5.00
December	2.90	2.75	5.75	5.50
Year	2.90	2.40	10.00	2.90

Orange, West Indian

April 1, 1915, the price was $1.35; 1920, June, 60c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$2.50	$2.45	$2.75	$2.75
February	2.50	2.45	2.75	2.70
March	2.50	2.50	2.85	2.85
April	2.50	2.50	4.50	2.85
May	2.50	2.50	9.50	4.75
June	2.50	2.45	9.50	8.25
July	2.50	2.50	8.00	7.00
August	2.50	2.50	7.00	7.00
September	2.50	2.50	6.75	5.75
October	2.60	2.50	5.75	5.00
November	2.60	2.60	5.00	4.50
December	2.75	2.60	5.25	5.00
Year	2.75	2.45	9.50	2.75

Peppermint, Natural

October 18, 1871, the price was $3.35 to $3.50; 1881, $2.70 to $2.80; 1891, $2.50 to $2.80; 1901, $1.65 to $1.75; 1911, $2.87½ to $2.95; 1913, $3.70 to $3.80; 1919, March, $9.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$4.75	$4.25	$3.30	$3.25
February	4.15	4.00	3.30	3.30
March	4.15	4.00	3.30	3.30
April	4.00	3.55	3.30	3.20
May	3.60	3.50	3.20	3.20
June	3.85	3.60	3.20	3.20
July	3.90	3.75	3.20	3.10
August	3.60	3.50	3.10	3.10
September	3.45	3.00	3.20	3.10
October	3.20	2.85	3.20	3.20
November	3.30	3.30	3.35	3.35
December	3.30	3.25	3.35	3.35
Year	4.75	2.85	3.35	3.10

Eighteen Years' Prices

	Per pound	
	H.	L.
1928	$3.35	$3.10
1927	4.75	2.85
1926	26.00	4.75
1925	28.00	10.00
1924	10.00	3.25
1923	3.25	2.65
1922	3.25	1.70
1921	3.00	1.70
1920	8.25	5.00
1919	9.00	5.25
1918	5.25	2.90
1917	3.60	2.20
1916	2.30	1.80
1915	2.00	1.85
1914	4.60	1.40
1913	3.85	2.75
1912	2.85	2.75
1911	2.90	2.25

Sandalwood, East India, U.S.P.

November 22, 1871, the price was $9.50 to $10; October 18, 1881, $7 to $8; 1891, $2.10 to $6; 1901, $3.50 to $3.75; 1911, $2.75 to $3; 1913, $5.50 to $6; 1917, December, $14.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$7.10	$7.00	$7.00	$7.00
February	7.00	7.00	7.00	7.00
March	7.00	7.00	7.00	7.00
April	7.00	7.00	7.00	7.00
May	7.00	7.00	7.00	7.00
June	7.00	7.00	7.00	7.00
July	7.00	7.00	7.00	7.00
August	7.00	7.00	7.00	7.00
September	7.00	7.00	7.00	7.00
October	7.00	7.00	7.00	7.00
November	7.00	7.00	7.25	7.00
December	7.00	7.00	7.35	7.35
Year	7.10	7.00	7.35	7.00

Sassafras, Natural, U.S.P.

October 18, 1871, the price was $1.15 to $1.20; 1881, 57½c. to 65c.; 1891, 38c. to 42c.; 1901, 40c. to 43c.; 1911, 70c. to 75c.; 1913, 55c. to 60c.; 1918, October, $2.50.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.80	$0.80	$0.80	$0.80
February	.80	.80	.80	.80
March	.80	.80	.80	.80
April	.80	.80	.80	.80
May	.80	.80	.80	.80
June	.80	.80	.80	.80
July	.80	.80	.80	.80
August	.80	.80	.80	.80
September	.80	.80	.80	.80
October	.80	.80	.80	.80
November	.80	.80	.80	.80
December	.80	.80	.80	.80
Year	.80	.80	.80	.80

Spearmint, U.S.P.

June 5, 1872, the price was $4; October 18, 1881, $2 to $2.35; 1891, $1.85 to $2.35; 1901, $1 to $1.10; 1911, $4 to $4.50; 1913, $4; 1920, February, $18.50.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$4.50	$4.25	$4.25	$4.25
February	4.25	4.25	4.25	4.25
March	4.25	4.10	4.25	4.25
April	4.00	3.85	4.25	4.20
May	3.85	3.75	4.20	4.20
June	3.75	3.75	4.20	4.20
July	3.70	3.65	4.25	4.25
August	3.40	3.40	4.25	4.25
September	3.40	3.25	4.35	4.35
October	4.00	3.40	4.30	4.30
November	4.50	4.35	4.30	4.30
December	4.40	4.25	4.30	4.30
Year	4.50	3.25	4.35	4.20

Sixteen Years' Prices

	Per pound	
	H.	L.
1928	$4.35	$4.20
1927	4.50	3.40
1926	12.75	4.50
1925	14.00	3.75
1924	4.25	2.40
1923	2.50	2.35
1922	3.25	2.80
1921	6.25	2.75
1920	13.50	6.25
1919	12.00	5.50
1918	6.50	3.40
1917	3.65	1.85
1916	1.90	1.50
1915	1.75	1.35
1914	4.00	1.50
1913	4.85	4.00

Sweet Birch, Southern

November 22, 1871, the price was $4.40 to $4.50; October 18, 1881, $3.15 to $3.20; 1891, $1.80 to $1.90; 1901, $1.40 to $1.60; 1911, $1.35 to $1.75; 1918, $1.50 to $2; 1919, December, $6.25.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.75	$1.75	$1.75	$1.75
February	1.75	1.75	1.75	1.75
March	1.75	1.75	1.75	1.75
April	1.75	1.75	1.75	1.75
May	1.75	1.75	1.75	1.75
June	1.75	1.75	1.75	1.75
July	1.75	1.75	1.75	1.75
August	1.75	1.75	1.75	1.75
September	1.75	1.75	1.75	1.75
October	1.75	1.75	1.75	1.75
November	1.75	1.75	1.75	1.75
December	1.75	1.75	1.75	1.75
Year	1.75	1.75	1.75	1.75

Wintergreen Leaf, Southern

October 18, 1901, the price was $2.25 to $2.90; 1911, 04.25 to $5; 1913, $4.25 to $4.50; 1919, September, $9.75.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$3.60	$3.60	$3.60	$3.60
February	3.60	3.60	3.60	3.60
March	3.60	3.60	3.60	3.60
April	3.60	3.60	3.60	3.60
May	3.60	3.60	3.60	3.60
June	3.60	3.60	3.60	3.60
July	3.60	3.60	3.60	3.60
August	3.60	3.60	3.60	3.60
September	3.60	3.60	3.60	3.60
October	3.60	3.60	3.60	3.60
November	3.60	3.60	3.60	3.60
December	3.60	3.60	3.60	3.60
Year	3.60	3.60	3.60	3.60

Wormseed

November 22, 1871, the price was $2.50 to $2.60; October 18, 1881, $2.25 to $2.50; 1891, $1.40 to $1.50; 1901, $1.10; 1911, $3.75 to $4; 1913, $2 to $2.20; 1918, July, $11.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$3.25	$3.00	$3.35	$2.80
February	3.00	3.00	3.35	3.35
March	3.00	3.00	3.35	3.35
April	3.00	2.85	3.25	3.25
May	2.85	2.75	3.00	3.00
June	3.50	3.00	3.00	2.85
July	3.75	3.50	2.75	2.60
August	3.75	3.75	2.50	2.45
September	3.75	3.75	2.45	2.30
October	3.75	3.50	2.35	2.20
November	3.50	2.90	2.10	1.90
December	2.85	2.80	1.90	1.90
Year	3.75	2.75	3.35	1.90

Prosperity's Unstable Equilibrium In 1928 Leaves 1929 a Puzzle

(Continued from page 3)

the following indexes of conditions, sales, and prices in each of the major markets, based on reports from representative concerns in the several lines:—

	Compared with 1928		
	General conditions.	Sales.	Prices*
Industrial chemicals	103.4	105.2	97.4
Coaltar products	103.6	104.2	101.7
Dyestuffs and tanstuffs	102.5	103.4	94.2
Fertilizer materials	99.9	106.7	96.8
Paint and varnish materials	103.8	104.6	99.2
Naval stores	101.7	100.0	100.7
Drugs and fine chemicals	105.0	105.8	96.9
Botanical drugs	102.6	105.0	92.2
Essential oils	103.6	104.5	142.4
Gums and waxes	103.7	105.0	92.6
Oils, fats, and greases	103.0	104.1	98.3
Flaxseed products	102.3	102.0	108.7
Cottonseed products	103.8	102.5	108.7
Petroleum	104.9	109.2	117.3
Averages	103.2	104.4	103.4

*At the end of the year.

There is not so much spottiness in these records as would be found in a similar summarization of general business conditions. Steadiness was the rule in the chemical business world; steadiness was quite well maintained even in petroleum, the last division of the group to realize the danger of over-production and seasonal spurts. It is noticeable that there was considerable variation among the several divisions in the matter of prices. But, it must not be overlooked that many of the lower prices obtaining during the year were the result of improvements in production. In most of the markets where prices were lower than they had been in 1927, the differences were not so great as to necessitate hunting for reasons which indicated serious disturbance of conditions. The gains shown for the whole group, in volume of sales and in general conditions, as well as in prices, are clearly indicative that the situation is sound. Business in chemicals, oils, drugs, and related products will, of course, feel the effects of such changes as may come in industry and commerce generally in 1929. This group will not, however, be the leader in the recession which many expect, nor will it be the most seriously affected by any break which may come.

There is no special justification at this time for predicting a business slump during 1929. It is true that the automotive industry is not likely to have another year as big as 1928; because the past year presented an opportunity to recover some of the ground which had been lost in 1927—and most of it was regained. It is true that periods of high interest rates have quite regularly been followed by business depression. A repetition of this sequence has been predicted for months, and doubtless it will come in time. Meanwhile, the general business structure is being strengthened, so that it no longer depends for support largely on one industry or on stock speculation. A drop in the output of automobiles will not wreck business in the United States. A Wall Street "bust" will not demolish the gigantic industrial-commercial structure which has been built up in this country in the past six years.

Some doubt has crept into the general view of the business future. But, no panicky fear has resulted. There is no reason why it should arise. This is a time for caution, clearly, but not for being over-cautious. It is a time for preparation against such disturbing eventualities as there is a bit of reason to expect. It is a time for business men to stand fast in the saving belief that it is for them to say what shall be the conditions of business.

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Gums, Waxes, Shellac: Market Review

Business in the gum and wax market during the past year proved to be well ahead of that in the previous year. The increase in volume was accompanied by a betterment in profits and a generally more satisfactory situation. Stocks were sufficient most of the time to care for all demands promptly. Shortages in a few items developed toward the end of the year and were accompanied by advancing prices and persistent demand. Quotations as a whole were well stabilized throughout the period.

Gums

The principal features of the gum market were the scarcity and high prices for sandarac, the strength and weakness of myrrh, the ending of camphor refining in the United States, the persistent rise in prices for Curacao aloe, the strong market for mastic, and the maintenance of benzoin at a high level of quotations throughout the year.

Strength in sandarac did not develop until the last quarter of the year. Prior to that quotations on the spot had been between 25c. and 26c. per pound most of the time. However, shortly after October 1, when prices were 26c., the advance started. By the end of the year prices had reached 55c. per pound, with everything favorable for continued rise.

The advance was caused by two factors. First, a reduced production in the primary market. Second, co-operative agreements between the two principal shippers at the source of supply. As the year drew to an end it became almost impossible to obtain offerings of shipment goods regardless of prices. Sellers here advanced prices to conserve supplies, and while the higher levels did check the call somewhat, there was still sufficient buying to put the market up steadily.

Myrrh went through three phases during the year. From January through May the market was an advancing one. The year began at 60c. per pound and by the end of May the market had reached 85c. per pound. Then began the second phase. From the end of May until early October prices were stable at 85c. per pound. Suddenly arrivals of ample quantities of gum and release of the same by the Department of Agriculture led to creation of a surplus supply and a consequent break in prices. The first break brought the market down to 70c. By the end of November it was down to 55c. And by the end of December 53c. was openly quoted. The shortage of stocks earlier in the year had been caused mainly by the shipment of a quality of merchandise so dirty as to lead to major rejections by the department. An idea of rejections may be gained from the fact that during the fiscal year ended July 31, 1928, importations totaling 103,421 pounds were made. Of this quantity, 43,183 pounds were examined and 22,009 pounds were rejected.

Refining of camphor came to an end in the United States in September. In that month the one refiner still in business withdrew all prices and went out of that business. The American refiners were driven out by the sales policy adopted by the Japanese. This policy had for its keystone the sale of camphor in refined form. This phase of the policy contemplated an end to the shipment of crude camphor to refiners in other countries and was predicated on the theory that it was to Japan's interest to do her own manufacturing, shipping the finished product and obtaining the profits which others might make. The price of crude was set so high that refining in this country became highly unprofitable. At the time of stoppage the price schedule of the domestic producers was 66c. per pound, as compared with 60c. charged for the Japanese refined article.

Another feature of the camphor market was the continued decrease in the imports of synthetic camphor, mainly from Germany. The Japanese showed real gains in their fight to recover the ground lost to the makers of synthetic camphor in the previous years.

An idea of these gains are gained from the importations of crude, refined natural camphor and synthetic camphor for eleven months of the calendar year. In fact, the statistics for the past two years show a pronounced success for the Japanese scheme to recover lost business. Statistics for the past two years show a definite trend in favor of natural camphor. Such imports have more than doubled since last year, while purchases of the synthetic product have fallen off almost a third. Natural crude camphor imports the first eleven months of 1928 rose to 3,940,000 pounds from 1,690,000 the same period in 1927, while synthetic imports have declined from 2,610,000 to 1,829,000 pounds.

Pricewise, Japanese camphor declined most of the time. In January the market was 57c. per pound and by the end of February it was 65c. per pound—practically the sole substantial advance during the year. By July the market was down to 60c. and by the end of the year it was down to 58½c. The second part of the year found prices somewhat more stable. In December, increased demand was reported parallel with the spread of influenza throughout the country.

Curacao aloe advanced from 11½c. per pound in January to 19c. at the close of the year. The advance was almost continuous throughout the year. It was caused by the low quality of merchandise sent here. Excess of moisture led to frequent rejections and this put passed merchandise at a premium. Imports for the fiscal year ended July 31, 1928, totaled 938,832 pounds. The entire quantity was examined and of it, 74,460 pounds were rejected.

Asafetida was also subject to heavy rejections. The total imported to the end of July, 1928, was 100,157 pounds, of which amount, 94,579 pounds were examined and 31,206 pounds were detained.

The detentions were due to dirt and low alcohol extract. Despite these detentions, price trend was downward for most of the year. This was due to the fact that rejections in the previous year had led to prices considerably higher than normal. Quotations in 1928 were lowest at 24c. per pound, prevailing from August to the end of the year. They were highest at 29c., which was paid in January and February.

Mastic advanced from 56c. per pound in January to 65c. per pound at the end of December. The advance came mainly in the second half of the year and much of it was noted in the last quarter. The limited foreign stocks were strongly controlled and available only at advancing prices.

Olibanum lacked much of importance until toward the close of the year when dark tears became almost unobtainable and prices underwent a substantial advance. From January to the end of June, the market at all times was between 13c. and 15c. per pound. By October, prices were up to 16c. and by December they were 19c. Siftings were firmer, but without great change.

Waxes

Developments in the market for waxes during the past year included little of the sensational or the unexpected. Market trends were entirely normal, the rise and fall in prices being within limits usually covered in any normal year and the causes for said movement being those more closely related to the law of supply and demand. Stability was perhaps a feature of the market most of the time.

African bees wax was stable between 36c. and 37c. per pound throughout the year. The market was 36c. from January to May when it moved to 37c. It remained at 37c. during June and in July returned to 36c. At the end of the year it was still 36c., there having been no change in the market during that time. Demand was about normal most of the time.

Carnauba wax underwent less speculative manipulation than usual for that article. While at times there was the usual short selling to contend with, most of the time merchants made prices on a business and not a speculative basis. North Country No. 3 sold for 28c. per pound in January and by the end of March 30c. per pound was being paid. April and May found prices stable at that figure. In June it dropped to 29c. and in July it was back to 28c. August and September were months in which orders were booked at 26c. From October to the end of the year fluctuations were between 26c. and 25c. per pound, with the latter figure quoted at the end of December. In fact, the entire group of carnaubas was rather weak at the end of the year. Demand was very slack, a normal condition. But the primary market evidently held a large quantity of wax and from the way prices acted in the shipment market, it appeared that a buyers' market prevailed.

Japan wax underwent a deal of speculation. New importers entered the field and in seeking a market cut prices beyond limits at times warranted by the replacement cost of the article. Outside of this situation, the market held little that was strange. Prices were steady at 18½c. per pound in January and fractional declines put them down to 17½c. per pound by the end of March. April, May and June found orders being booked mainly at 17½c. per pound. In July, business was done at 17c. per pound, which was the low point for the year. An advance from 17c. to 17¾c. per pound took place in August and in October 20c. was reached. Easier and lower replacement costs then began to come in from Japan and the result was that by the end of December the market was down to 18½c. per pound.

Shellac

Conditions in the market for shellac during 1928 were more stable and indicative of a more healthy tone than had oftentimes been the case in recent years. Fair demand was reported most of the time and prices ruled free of the sudden swings that in times past had turned the market almost into a shambles.

Quotations on spot were low for the year at 40c., in March, and were high for the year at 54c., in January, though 53c. was done in July. Though this spread of 14c. in price range was wide, it was reached by fairly easy stages. Conservative changes took place with normal frequency and at no time did it appear that changes made were the result of rash speculative ventures.

The fact of the Bysacki, the principal crop, turned out to be an ample one did much to keep the market clear of developments not entirely in line with basic conditions predicated mainly on the operation of the law of supply and demand.

Importations into the United States were somewhat less than in 1927. The official figures of the United States Department of Commerce made the total arrivals for eleven months of 1928 22,019,900 pounds as compared with 23,552,994 pounds for the equivalent period 1927.

The decrease in takings came parallel with an increase in the production of Bysacki shellac. The estimates made in March were close to 250,000 packages and the minimum estimate was 200,000 packages. The normal crop has in the past been said to be about 175,000 packages. Therefore, that in 1928 was above normal. It was also far above the crop in 1926, which was but 76,000 packages and which was so small as to drain all warehouses in Calcutta, and in the back country, of surplus stocks; otherwise, world requirements never would have been met in 1926-1927.

Business in the United States reached a good volume during the year. Bleachers were busy most of the time and it is safe to say that they made more real money than in recent years for the reason that unreasoning competition and unbridled cutting of prices was absent to a considerable extent in 1928. Bleachers also put an open price association into effect.

The year brought some changes in line-up of the trade. Financial difficulties came to one large house. A new firm entered business almost parallel with the virtual withdrawal of the financially embarrassed concern from its former position of market prominence. The two events were not unrelated.

The close of the year found the market in rather firm position, with no surplus stock in sight and conditions fairly favorable to a steady situation in prices.

Record of the First Quarter

Basing market comment on T. N. shellac, it may be said that the year opened in January at 54c. per pound, spot New York, with a downward tendency in prices. Also, this was the highest price obtained during the year. The Calcutta market was 49¼c. per pound, while in London the March delivery was selling for 225s. per hundredweight. By the end of the month, New York prices were down to the basis of 49c. per pound, Calcutta was a seller at 37½c. and London was wanting 184s. per hundredweight for the March delivery.

Arrival of rather ample stocks during January and February kept the market on the spot to downward tendency, but the definite declines in Calcutta were the determinating element that brought all quotations to a substantially lower position. During the month of February the spot price declined from 44c. per pound to a low of 41½c. reached in the last week of the month. The decline continued into March and business was written at 40c. per pound during the third week of that month. Recovery started during the last week and 42c. was the market.

Calcutta was quoted at 39½c. per pound early in February and by the end of that month was down to 36.6c. per pound. The decline carried over into March, when a low point of 34¼c. per pound was reached during the last week. London during the first week in February was 181s., was 167s. at the end of the month, and sold down to 165s. one time in March, the May delivery so selling during the second week. By the end of March, however, May sold for 179s.

Prediction of a fairly large Bysacki crop was made late in February by the assistant United States Trade Commissioner at Calcutta.

The following tabulation quotes spot prices in cents per pound:—Calcutta prices on a c. & f. basis, New York, landed terms, cash on arrival, and London quotations on a basis of shillings per hundredweight:—

T. N. Prices—First Quarter

Reporter Issue of—	New York. Per lb. Cents.	Calcutta. Per lb. Cents.	London. Per cwt. s. d.
January 2.....	54	49¼	*225 0
January 9.....	52	46	206 0
January 16.....	52½	46	210 0
January 23.....	51	43	202 6
January 30.....	49	37½	184 0
February 6.....	44	36½	181 0
February 13.....	43	37½	185 0
February 20.....	43	38	185 0
February 27.....	41½	36.6	167 0
March 5.....	40	34½	Nom.
March 12.....	40	35⅝	†165 0
March 19.....	40	36½	167 6
March 26.....	42	34¼	179 0

* March. † May.

Record of the Second Quarter

Price progress in the second quarter was less clearly defined. Fluctuations were more frequent, were within a narrower range, and the changes, up or down as the case was, came irregularly and without showing a definite market trend one way or another.

Quotations swung through an arc of 4c. per pound, being lowest at 43c. per pound and highest at 47c. Only once did they reach 47c., but four times they were at 43c. and once at 43½c.

During April spot prices were mostly 43c. and never above 43½c. Calcutta began that month at 36½c. per pound, sold down to 33¾c. per pound and was high at 36½c. London was quoted 183s. per hundredweight during the first week of the month, being the May delivery price, and was down to 170s. at one time. By the end of the month the market there was back to 177s.

May found spot prices in an advance, climbing from 43c. in the first week to 47c. during the third week. Calcutta rose from 33⅝c. to 42.1c., though at the end of that month the price there was 41c. London was quoted at 181s. during the first week in May, advanced to 196s. and ended the month at 187s.

During June spot prices were more stable, ranging from 44c. to 44½c. per pound, but holding for three weeks at the latter figure. Calcutta was low at 39c. and high at 40¾c. per pound. London began the month at 182s., declined to 180s. during the next two weeks, and reacted to 184s. at the end of the month, the August position so selling.

It was in June that a sliding scale of prices was put into effect by the manufacturers of bleached shellac. This action was to be the forerunner of adoption of a code of ethics and establishment of an open price association, developments which were made official late in October, but which resulted from the work done early in the year and which dated mainly from June, when the sliding scale was put into effect.

This scale was the one tried in the previous year, but which was abandoned by most bleachers when competition kicked the scheme into a cocked hat. When resumed in June, 1928, the bleachers all observed its provisions. It provided separate prices for 100-barrel lots, 50 to 99 barrels, 10 to 49 barrels, and 1 to 9 barrels.

The following tabulation quotes spot prices in cents per pound, Calcutta prices on a c.&f. basis, New York, and London quotations on a basis of shillings per hundredweight:—

T. N. Prices—Second Quarter

Reporter Issue of—	New York. Per lb. Cents.	Calcutta. Per lb. Cents.	London. Per cwt. Shillings.
April 2.....	43	36½	*183
April 9.....	43	35½	175
April 16.....	43½	33⅞	170
April 23.....	43	33⅝	177
April 30.....	43	33⅝	181
May 7.....	45	38	195
May 14.....	45	40	196
May 21.....	47	42.1	†182
May 28.....	46	41	187
June 4.....	44½	40¾	182
June 11.....	44½	39⅞	182
June 18.....	44	39	180
June 25.....	44½	40¾	184

* May. † August.

Record of the Third Quarter

Buying in Calcutta and London early in July caused a brilliant advance in prices at both points. It was perhaps the sole instance of a spontaneous, vigorous rise in values utterly unlike the more leisurely advances at other times.

Spot quotations during the first week were 44½c. per pound and by the third week of the month the local quotation was 53c. This was the sole time during the year when changes in quotations brought the market on spot close to the high point of 54c., which had ruled during the first week of January. The reaction came promptly and during the last week of the month the market was 50c. Calcutta rose from 41c. per pound in the first week of July to 51⅞c. in the third week, only to react to 47½c. during the fourth week. London was 190s. per hundredweight on July 1 for the August position. The advance during the first three weeks put the market to 230s., but the month ended at 220s.

SHELLAC

About three years ago the Mantrose Corporation began manufacturing *Quality* Bone Dry in what is now acknowledged to be the most modern bleaching plant in the United States.

Economy of operation through modern equipment, together with a highly efficient corps of recognized chemists to maintain *Quality* standards, has won for the Mantrose Corporation the distinction of having sold more bleached shellac during 1928 than any other bleacher.

Much publicity has recently been given to moisture, rosin and wax content guaranties. It is gratifying to note that competitors have seen fit to raise their standards in this regard. The standards of *Quality* Bone Dry permit guaranties as to moisture, wax and rosin content to conform to the highest standards set by the American Bleached Shellac Manufacturers Association. The further guaranty is also given that *Quality* Bone Dry will stay soluble and will retain its original unmatched color for a longer period than any other bleached Shellac.

Increased factory facilities will be available to insure prompt deliveries of Quality Bone Dry Bleached Shellac for the current year.

THE MANTROSE CORPORATION

136-146 41st Street - - Brooklyn, N. Y.

August opened with a 3c. drop in spot prices, 47c. being done. The decline continued to 45c. at the end of the month. Calcutta declined from 45¾c. per pound during the first week to 42c. reached in the third week. The market reacted upward to 43½c. before the end of the month. London was 220s. early in the month and was down to 210s. for the October position by the third week. The month ended at 216s.

September was more stable. Spot quotations rose from 45c. to 47c. during the period. Calcutta rose from 43c. to 45¼c. by the end of the month. London was 220s. during the first week and was at 223s. during the last week.

The following tabulation quotes spot prices in cents per pound, Calcutta prices on a. c. & f. basis, New York, and London quotations on a basis of shillings per hundredweight:—

T. N. Prices—Third Quarter

Reporter Issue of—	New York. Per lb.	Calcutta. Per lb.	London. Per cwt.
July 2	44½c	41c	*190s
July 9	46c	45c	209s
July 16	53c	51⅞c	230s
July 23	50c	47½c	220s
July 30	47c	45¾c	220s
August 8	47c	43¼c	207s
August 15	45c	42c	†210s
August 22	46c	43c	212s 6d
August 29	45c	43½c	216s
September 3	45c	43c	220s
September 10	45c	44¼c	217s 6d
September 17	47c	44¾c	222s 6d
September 24	47c	45¼c	223s 6d

* August. † October.

Record of the Fourth Quarter

One of the most interesting periods of the year was the fourth quarter. First of all, prices were downward in trend most of the time. And this trend prevailed despite the fact that stocks on spot were very scarce at times. The scarcity included both blocked and free goods, though it was pronounced almost all the time so far as free T.N. and other marks were concerned. It was also a fact that importations continued to come in hard blocked well into December, by which time, ordinarily, free goods should be the rule.

In late October, the American Bleached Shellac Manufacturers' Association adopted its code of ethics. The code was prepared and submitted to the Department of Justice at Washington. While official and specific approval was withheld, the department indicated that it could find nothing to find fault with in the code and that it would watch carefully how it worked after adoption by the association.

The code enumerated in great detail all the malpractices in the bleached shellac trade for years past. Everything that at any time had worked to the apparent disinterest to the trade as a whole, or even to individuals in the trade, was put on record, examined and, if vital, included in the general list of practices or custom under the ban and looked on as unfair tactics between competitors.

The code also contained a provision for putting an open price schedule into effect. This provision made every member of the association publish his price with the secretary of the organization, where it was open to the inspection of all. Prices might be changed at will, but in each instance the change had to be registered with the secretary. Thereafter the price must be observed until notice of further change was made.

For a time, one shellac bleacher quoted one-half cent under all the rest, which was within his right to do. Late in the year, however, this bleacher fell into line with all the others. The result was that all bleachers quoted the same prices all the time. The same arrangement was effective for shellac varnish.

Pricewise, each month had a narrow trend of values. In October, the spot quotation held at 47c. per pound for three weeks, and by the end of the month it was down to 45c. Calcutta was at 45½c. early in the month, but the market was 41¼c. at the end. London was 222s. per hundredweight for the October delivery, but by the close of the month the market there was down to 192s.

Just the opposite trend came in November. Spot quotations were low at 44c. per pound at the beginning of the month and remained there for two weeks. In the third, 47c. was done, and that ruled to the end of the period. Calcutta was low at 41¼c. per pound and was high at 45c. during the third week. The month ended at 44c. London rose from 198s. per hundredweight for the December position to 206s., though 203s. was quoted last at the end of the month.

The last month of the year was a period of price declines, though spot stocks did little to aid in the movement; holdings were usually conservative.

Spot quotations declined from 46c. to 43c.; Calcutta fell from 42¼c. to 40c., and London was down from 197s. to 186s. per hundredweight.

The following tabulation quotes spot prices in cents per pound, Calcutta prices on a c.&f. basis, New York, and London quotations on a basis of shillings per hundredweight:—

T.N. Prices—Fourth Quarter

Reporter Issue of—	New York. Per lb.	Calcutta. Per lb.	London. Per cwt.
October 1	47c	45½c	*222s 6d
October 8	47c	44¼c	220s
October 15	47c	44¼c	222s 6d
October 22	45½c	42¼c	†200s
October 29	45c	41¼c	192s
November 5	44c	41¼c	198s
November 12	44c	42¾c	202s 6d
November 19	47c	45c	206s
November 26	47c	44c	203s
December 3	46c	42¼c	197s
December 10	46c	41¾c	197s
December 17	46c	40¾c	188s
December 24	43½c	40c	‡190s
December 31	43c	40¼c	186s

* October. † December. ‡ March.

Importations of shellac, all kinds included, into the United States during the calendar year 1928, with comparative figures for 1927, supplied by the United States Department of Commerce, were as follows:—

	Pounds 1928.	1927.
January	1,884,858	2,851,593
February	2,248,693	1,332,792
March	1,952,063	2,441,983
April	1,662,747	1,361,016
May	1,331,923	2,386,769
June	1,613,106	2,408,510
July	2,511,202	2,353,855
August	2,783,687	1,907,818
September	1,945,493	2,687,526
October	2,019,269	2,569,991
November	2,096,807	1,251,141
Totals	22,019,900	23,552,994

Camphor, American, Refined, Lump

October 18, 1871, the price was 69½c. to 70c.; 1881, 24½c. to 25c.; 1891, 43c.; 1901, 57c. to 57½c.; 1911, 45c. to 46c.; 1913, 42¼c.; 1919, September, $3.30.

	Per barrel 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.79	$0.72	$0.62	$0.62
February	.72	.72	.66	.62
March	.72	.72	.66	.66
April	.72	.72	.66	.66
May	.72	.72	.66	.66
June	.72	.72	.66	.66
July	.72	.72	.66	.66
*August	.72	.62	.66	.66
September	.62	.62	...	...
October	.62	.62	...	...
November	.62	.62	...	...
December	.62	.62	...	...
Year	.79	.62	.66	.62

* Due to the inability of American refiners to obtain crude camphor, save at very high prices because of Japan's policy of selling only refined camphor, the domestic refining of camphor stopped permanently in August, 1928.

Nineteen Years' Prices

	Per pound H.	L.
1928	$0.66	$0.62
1927	.79	.62
1926	.84	.79
1925	.84	.80
1924	.93	.80
1923	.96	.93
1922	.96	.90
1921	1.00	.75
1920	3.30	1.00
1919	3.30	2.50
1918	1.34½	.76½
1917	.80½	.74½
1916	.86½	.42
1915	.44½	.41
1914	.59½	.41
1913	.44	.42
1912	.44	.44
1911	.49½	.42
1910	.45	.42

NOTE.—Owing to the American camphor refiners' inability to secure supplies of crude beyond that necessary to meet their government contracts, they withdrew all quotations in October, 1918, when the influenza epidemic forced the rise in Japanese refined camphor to $4 per pound.

Camphor, Japan, Refined, Slabs

October 18, 1871, the price was 69½c. to 70c.; 1881, 24¼c. to 25c.; 1891, 43c.; 1901, 57c. to 57½c.; 1911, 45c. to 46c.; 1913, 42½c. to 46c.; 1919, October, $3.65.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.72	$0.68	$0.57	$0.57
February	.68	.68	.65	.57
March	.68	.66	.65	.65
April	.66	.65	.65	.64
May	.65	.65	.63	.62
June	.65	.64	.62	.62
July	.65	.64	.62	.60
August	.64	.64	.60	.60
September	.64	.63	.60	.60
October	.63	.60	.60	.58½
November	.62	.60	.60	.58¼
December	.60	.60	.60	.59¼
Year	.72	.60	.65	.57

Myrrh

October 18, 1871, the price was 42c. to 46c.; 1881, 27c. to 30c.; 1891, 16c. to 40c.; 1901, 12c. to 25c.; 1911, 13c. to 18c.; 1913, 13c. to 16c.; 1919, February, $1.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.25	$0.24	$0.60	$0.60
February	.28	.24	.65	.60
March	.28	.28	.70	.70
April	.28	.28	.80	.70
May	.28	.28	.85	.80
June	.28	.28	.85	.85
July	.28	.28	.85	.85
August	.27	.27	.85	.85
September	.30	.27	.85	.85
October	.37	.30	.85	.70
November	.38	.37	.70	.55
December	.60	.38	.55	.53
Year	.60	.24	.85	.53

Tragacanth, Aleppo, No. 1

October 18, 1871, the price was 60c. to 82½c.; 1881, 40c. to 75c.; 1891, 24c. to 48c.; 1901, 60c. to 65c.; 1911, 35c. to 77c.; 1913, $1.25 to $1.30; 1920, March, $3.25.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$1.55	$1.55	$1.55	$1.55
February	1.55	1.55	1.55	1.55
March	1.55	1.55	1.55	1.55
April	1.55	1.55	1.55	1.55
May	1.55	1.55	1.55	1.55
June	1.55	1.55	1.55	1.55
July	1.55	1.55	1.55	1.55
August	1.55	1.55	1.55	1.55
September	1.55	1.55	1.55	1.55
October	1.55	1.55	1.55	1.55
November	1.55	1.55	1.55	1.55
December	1.55	1.55	1.55	1.55
Year	1.55	1.55	1.55	1.55

Carnauba, N.C. No. 3

January 8, 1872, the price was 14c. to 16c.; October 18, 1891, 15c. to 20c.; 1901, 12c. to 13¼c.; 1911, 37c. to 38c.; 1913, 33c. to 33½c.; 1918, June, 81c.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.36	$0.33	$0.29	$0.28
February	.34	.33	.29½	.28
March	.34	.31½	.30	.28
April	.31½	.30½	.30	.30
May	.30	.30	.30	.30
June	.31½	.29	.30	.29
July	.31½	.31	.28	.28
August	.31	.30	.28	.26
September	.30	.29½	.27	.26
October	.30	.28	.26	.25½
November	.28	.28	.25	.25
December	.28	.28	.25½	.25
Year	.36	.28	.30	.25

Japan

January 12, 1881, the price was 15c. to 16c.; October 18, 1881, 12½c. to 13c.; 1891, 9c. to 10c.; 1901, 7¼c. to 7½c.; 1911, 8½c. to 8¾c.; 1913, 9c. to 9¼c.; 1918, September, 27½c.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.34	$0.24	$0.19	$0.18½
February	.24	.19	.18½	.18
March	.19	.18½	.18	.17½
April	.18½	.18	.18	.17½
May	.19½	.18	.17½	.17½
June	.19½	.18½	.17½	.17½
July	.19	.18½	.17	.17
August	.18½	.18½	.17¾	.17
September	.18½	.18	.17¾	.17¾
October	.18	.17¼	.20	.17¾
November	.18	.18	.20	.19
December	.19	.19	.19	.18¼
Year	.34	.17¼	.20	.17

Shellac

Shellac, D.C.

August 22, 1877, the price was 26c.; 1881, 38c. to 39c.; 1891, 30c. to 31c.; 1901, 33c. to 34c.; 1911, 22c. to 23c.; 1913, 27c. to 28c.; 1920, July, $1.75.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.60	$0.60	$0.66	$0.63
February	.60	.60	.62	.60
March	.60	.58	.60	.60
April	.58	.55	.61	.61
May	.62	.55	.62	.61
June	.63	.61	.62	.62
July	.71	.71	.66	.62
August	.71	.66	.61	.60
September	.66	.66	.62	.60
October	.60	.60	.62	.60
November	.63	.60	.60	.60
December	.68	.64	.62	.58
Year	.71	.55	.66	.58

Shellac, T.N.

October 18, 1871, the price was 31c. to 42c.; 1881, 29c. to 30c.; 1891, 21c. to 23c.; 1901, 23c. to 25c.; 1911, 14c. to 14½c.; 1913, 21½c. to 23c.; 1920, January, *1.60.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.44	$0.42	$0.52	$0.49
February	.42	.42	.43	.41½
March	.42	.38	.42	.40
April	.37	.37	.42½	.42
May	.48	.38	.47	.45
June	.50	.49	.44½	.44
July	.58	.57	.53	.44½
August	.57	.52	.47	.45
September	.51	.49	.47	.45
October	.48	.46	.47	.45
November	.49	.48	.47	.44
December	.55	.53	.46	.43
Year	.58	.37	.53	.40

Twenty-eight Years' Prices

	Per pound H.	L.
1928	$0.53	$0.40
1927	.58	.37
1926	.48	.24½
1925	.62	.45
1924	.65	.52
1923	.81	.51
1922	.82	.54
1921	.70	.44
1920	1.60	.65
1919	1.50	.46
1918	.68	.57
1917	.60	.39
1916	.39	.20
1915	.21	.13½
1914	.21	.14
1913	.23½	.16½
1912	.16½	.13½
1911	.18	.13½
1910	.19½	.14
1909	.20½	.14
1908	.29	.20
1907	.48	.26
1906	.50	.42
1905	.46	.42
1904	.52	.42
1903	.52¾	.26½
1902	.40	.24
1901	.30	.14
1900	.15	.14½

Shellac, Bleached, Bone Dry

	Per pound 1927. H.	1927. L.	1928. 100-bbl. lots. H.	1928. 100-bbl. lots. L.
January	$0.52	$0.50	$0.59	$0.56
February	.54	.50	.54	.49
March	.50	.45	.50	.47
April	.47	.45	.56	.49
May	.57	.47	.55	.55
June	.59	.59	.54½	.54½
July	.66	.65	.60½	.54½
August	.65	.60	.59½	.57½
September	.60	.58	.59	.55
October	.55	.55	.59	.57
November	.57	.54	.57	.55
December	.62	.60	.57	.55
Year	.66	.45	.60½	.47

Twenty-one Years' Prices

	Per pound H.	L.
1928	$0.60½	$0.47
1927	.66	.45
1926	.58	.32½
1925	.73	.55
1924	.73	.63
1923	.95	.63
1922	.94	.72
1921	.80	.53
1920	1.75	.80
1919	1.70	.56
1918	.79	.64
1917	.60	.39½
1916	.31	.34
1915	.24	.17½
1914	.27	.18½
1913	.27	.21
1912	.21	.19
1911	.26	.19
1910	.26	.20
1909	.25	.20
1908	.28	.20

Gums, Shellacs, Waxes: Record of Prices

Gums

Aloe, Curacao, Cases

November 22, 1871, the price was 20c. to 21c.; October 18, 1881, 13c. to 15c.; 1891, 2½c. to 5c.; 1901, 3¾c. to 4¼c.; 1911, 7¼c. to 7½c.; 1913, 8c. to 8½c.; 1918, April, 11c.

(In cases)

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.10	$0.10	$0.12	$0.11½
February	.10½	.10	.12	.12
March	.11	.10	.13	.12
April	.11½	.11	.14	.13
May	.12	.11¾	.16	.16
June	.12	.12	.16	.16
July	.12	.12	.16	.16
August	.12	.10½	.16	.16
September	.10½	.10½	.16	.16
October	.10½	.10½	.16	.16
November	.10½	.10½	.17	.16
December	.10½	.10½	.19	.17
Year	.12	.10	.19	.11½

Nineteen Years' Prices

	Per pound H.	L.
1928	.19	.11½
1927	.12	.10
1926	.10½	.09
1925	.11	.10
1924	.11	.07½
1923	.10½	.06
1922	.07½	.06
1921	.08½	.06
1920	.10	.08½
1919	.10	.08
1918	.10	.08
1917	.09½	.08
1916	.14	.09
1915	.15	.11½
1914	.16	.08
1913	.11	.06½
1912	.11½	.07¾
1911	.08	.06½
1910	.08¾	.06¾

Arabic, Cleaned Amber, Sorts

October 18, 1871, the price was 19c. to 21c.; 1881, 10½c. to 12½c.; 1891, 23c. to 25c.; 1901, 13c. to 26c.; 1911, 11½c. to 11¾c.; 1913, 8½c. to 9c.; 1917, October, 33c.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11½	$0.11	$0.10¾	$0.10½
February	.11	.10½	.10½	.10½
March	.10½	.10¼	.10½	.10½
April	.10½	.10	.10½	.10
May	.10¼	.10	.10	.09¾
June	.10¼	.10¼	.10	.09¾
July	.10¼	.10¼	.11	.09¾
August	.10¼	.10¼	.11	.11
September	.10¼	.10¼	.11	.10¾
October	.10½	.10¼	.10¾	.10¾
November	.10¾	.10½	.11¼	.10¾
December	.10¾	.10¾	.11¼	.11
Year	.11½	.10	.11¼	.09¾

Asafetida, Lump

October 18, 1871, the price was 55c.; 1881, 13c. to 14c.; 1891, 11c. to 15c.; 1901, 26c. to 30c.; 1911, 75c. to $1.25; 1913, 80c.; 1919, June, $6.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.31	$0.30	$0.29	$0.29
February	.31	.31	.29	.27
March	.31	.31	.27	.27
April	.31	.31	.27	.27
May	.31	.30	.27	.25
June	.30	.30	.25	.25
July	.30	.30	.25	.25
August	.30	.30	.25	.24
September	.29	.29	.24	.24
October	.29	.29	.24	.24
November	.29	.29	.24	.24
December	.29	.29	.24	.24
Year	.31	.29	.29	.24

Waxes

Beeswax, African

May 29, 1872, the price was 31c. to 32c.; October 18, 1881, 23c. to 24c.; 1891, 22c. to 24c.; 1901, 33c. to 35c.; 1911, 32c. to 33c.; 1913, 34c. to 35c.; 1918, November, 47c.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.40	$0.40	$0.36	$0.36
February	.40	.39	.36	.36
March	.39	.38	.36	.36
April	.38	.38	.36	.36
May	.38	.38	.37	.36
June	.38	.38	.37	.37
July	.38	.38	.36	.36
August	.38	.37	.36	.36
September	.37	.35	.36	.36
October	.38	.36	.36	.36
November	.36	.36	.36	.36
December	.36	.36	.36	.36
Year	.40	.35	.37	.36

Beeswax, Refined

May 29, 1872, the price was 60c. to 65c.; October 18, 1881, 30c. to 41c.; 1891 40c. to 45c.; 1901, 38c. to 50c.; 1911, 34c. to 36c.; 1913, 36c. to 37c.; 1918, November, 50c.

	Per pound 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.44	$0.44	$0.42	$0.42
February	.44	.43	.42	.42
March	.43	.43	.42	.42
April	.43	.43	.42	.42
May	.43	.43	.42	.41
June	.43	.43	.41	.41
July	.43	.43	.41	.41
August	.43	.43	.41	.41
September	.43	.41	.41	.41
October	.42½	.41	.41	.41
November	.42½	.42½	.41	.41
December	.42½	.42½	.41	.41
Year	.44	.41	.42	.41

Paint and Varnish REMOVERS

SCIENTIFICALLY DEVELOPED

Made by leading paint and varnish manufacturers

U. S. Patents:—

1,019,829	1,083,007	1,139,353	1,160,394	14,562	1,596,413
1,027,466	1,084,201	1,140,449	1,167,640	1,302,905	1,606,618
1,049,466	1,095,270	1,143,110	1,167,641	1,306,221	1,606,619
1,049,467	1,100,177	1,143,111	1,169,783	1,310,985	1,613,560
1,051,317	1,102,330	1,143,130	1,172,772	1,328,080	1,613,561
1,051,318	1,113,964	1,145,980	1,172,773	1,394,664	1,618,866
1,051,319	1,113,970	1,146,142	1,185,641	1,406,175	1,618,867
1,066,251	1,113,971	1,146,854	1,189,803	1,446,872	1,618,868
1,066,720	1,113,972	1,147,848	1,189,804	1,446,873	1,620,409
1,069,056	1,118,482	1,147,849	1,202,040	1,446,874	1,646,280
1,069,057	1,118,642	1,147,850	1,229,247	1,498,781	1,646,281
1,079,635	1,129,770	1,147,851	1,235,721	1,498,782	1,647,399
1,082,507	1,130,499	1,147,852	1,274,430	1,499,101	1,691,771

and pending patent applications.

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Paint and Varnish Materials: Market Review

Record construction activities throughout the country tended to stimulate the market for paint and varnish materials during 1928, and business showed satisfactory volume for the year. While irregularity developed in some divisions of the trade, market conditions, on the whole, were satisfactory and the leading manufacturing interests showed substantial gains over 1927 sales totals in most instances. The price trend, however, was downward, the Oil, Paint and Drug Reporter index number at the close of the year standing at 150.8, as compared with 152.0 at the beginning of 1928, and 157.2 at the start of the previous year.

Excessive competition again exercised an adverse influence on a number of important paint and varnish materials last year, but the market was somewhat better in this respect than during the previous year. A number of the large factors, compelled to maintain and enlarge volume to take care of larger productive capacity, furnished some keen competition on some of the larger tonnage business, and this was often reflected in price shading. Among the rank and file of the industry, however, there was less tendency shown to get into this competitive trading, and a number of interests decided to substitute profitable sales for unprofitable volume. While the influence of these factors upon the market was not sufficient to effect complete stabilization, there was noticeable improvement in underlying market conditions on a number of important materials and products which had been under keenest competition for the several preceding years. Chrome yellows and iron blues were outstanding examples of this trend, both showing slight improvement over the preceding year.

Lower prices for pig lead and slab zinc tended to weaken the markets on pigments made from these metals somewhat. Lead pigments in kegs remained stable in price throughout the year, fluctuations in the metal market not being of sufficient amount to cause corroders to revise their prices. The markets for dry pigments and oxides in casks, however, were revised several times during the year, closing the period at about the same levels as those in effect at the start of 1928, following a rally in the metal market during the fall months. Lithopone was lower in 1928 than during 1927, but zinc oxide prices held steady throughout the year.

Consuming manufacturers in most instances adhered rather closely to a hand-to-mouth policy in their buying operations during 1928. On some materials, on which markets were well stabilized and buyers protected against price declines, contract bookings covering requirements for the entire year were made, but such cases were exceptions, rather than the rule.

There were few revisions in prices for finished products during 1928. House paint prices were cut during the late summer season, this revision being due almost entirely to sharper competitive conditions on some grades, rather than any basic change in production or raw materials costs.

Considerable progress was made during the year in the development of the manufacture of quick drying enamels. Varnish makers were working on this product, to supplement their pyroxylin lacquer sales, and were centering their operations on the production of a "four hour dry" product. It is indicated that this product will attain considerable more importance this year.

With automobile production at a new high record for all time during 1928, there was a sharp increase in the consumption of lacquers and varnishes. Preliminary figures on output for 1928 indicate production of 4,607,000 passenger and commercial motor vehicles, a gain of approximately 1,027,000 over 1927. This was due in considerable measure to the resumption in operations by the Ford Motor Company. Automobile manufacturers were using lacquer almost exclusively on the popular-priced lines, and in a few instances manufacturers were giving each car a complete lacquer finish, this including a protective coating of the chassis.

While competitive conditions were responsible for a few price reductions during 1928, most of the revisions were in line with changes in raw materials costs and carried prices downward on several important materials.

Comparative Values

Index numbers for 1928, compiled from eleven typical paint and varnish materials, on the basis of a normal of 100 for August, 1914, with comparison with the previous year, compare as follows:—

	1928	1927
January 1	152.0	157.2
April 1	151.7	157.8
July 1	151.4	153.2
October 1	151.1	153.2
December 31	150.8	152.0

Record Construction

Construction totals for 1928 established a new high record for all time, but there were definite indications at the year-end that the peak of the building movement was over, and that appreciable declines were in sight in some sections of the country. Construction figures toward the close of the year indicated that the building boom was passing from the east to the southeast, southwest, and western States.

The 1928 construction volume was the highest in the history of the country, according to the Dodge Corporation report. Contracts let on new building and engineering work in the 37 states east of the Rocky Mountains during the past year reached a total of $6,628,286,100. This figure was 5 percent ahead of the total for the year 1927 and it was 4 percent in excess of the total for 1926. The previous high record had been held by 1926. The territory covered in the 37 eastern states represents about 91 percent of the country's total construction.

There was $432,756,300 worth of contracts let on new construction work during December. The above figure was 8 percent below the total for November, 1928, and there was a drop of 9 percent from the December, 1927, record. Analysis of last month's contract record showed the following important classes of work: $178,323,100, or 41 percent of all construction, for residential buildings; $80,194,000, or 19 percent, for public works and utilities; $66,772,600, or 16 percent, for commercial buildings; and $38,247,900, or 9 percent, for industrial projects.

Contemplated new work was reported in this territory to the amount of $725,178,800 during December. This figure shows a drop of 22 percent from the amount reported during the preceding month and there was a loss of 27 percent from the amount reported during the month of December, 1927.

December construction contracts amounted to $138,340,700 in New York State and Northern New Jersey. Last month's total was 2 percent ahead of the total for the preceding month and it was 7 percent greater than the total for December, 1927. Analysis of the December building and engineering record showed the following items of importance: $64,429,900, or 47 percent of all construction, for residential buildings! $24,470,500, or 18 percent, for public works and utilities; $19,752,200, or 14 percent, for commercial buildings, and $9,594,500, or 7 percent, for educational projects.

During the year 1928 there was $1,814,316,800 worth of new contracts let on new building and engineering work in New York State and Northern New Jersey. When the above figure was compared with the total for the year 1927 there was an increase of 8 percent.

Contemplated new work reported last month in this territory amounted to $195,026,200. There was a drop of 2 percent from the amount reported in November, 1928, and there was a loss of 17 percent from the amount reported in December, 1927.

The New England States had $28,222,900 in contracts for new construction work during the past month. The above figure showed a loss of 8 percent from the total for November, 1928, and there was a loss of 9 percent from the total for December, 1927. Included in last month's building record were the following important classes of work:—$13,907,400, or 49 percent of all construction, for residential buildings; $2,746,100, or 10 percent, for commercial buildings; $2,453,000, or 9 percent, for hospitals and institutions; $2,386,000, or 8 percent, for educational projects; and $2,087,500, or 7 percent, for public works and utilities.

The year 1928 closed with a total construction volume of $495,581,000, as compared with a total of $412,767,300 for the year 1927, the increase being 20 percent.

The New England States reported $38,011,900 worth of new contemplated projects during the month of December. The above figure was 12 percent ahead of the total for the preceding month, but there was a loss of 25 percent from the total for December, 1927.

Building and engineering contracts were awarded last month to the amount of $51,962,100 in the Middle Atlantic States (Eastern Pennsylvania, Southern New Jersey, Maryland, Delaware, District of Columbia and Virginia). The above figure was the highest December contract total ever recorded or this area. It was 14 percent ahead of the December, 1927, record, but there was a decrease of 5 percent from the total for November, 1928.

Last month's construction record included the following items of note:—$19,605,700, or 38 percent of the total, for residential buildings; $11,784,800, or 23 percent for commercial buildings; $7,066,700, or 14 percent, for public works and utilities; and $4,975,100, or 10 percent, for industrial projects.

During the past year there was $787,672,800 worth of new construction work contracted for in the Middle Atlantic States, being a gain of 9 percent over the amount contracted for during the year 1927.

New contemplated work reported last month in this district reached a total of $135,142,300. This figure was 22 percent less than the total for November, 1928, and there was a drop of 2 percent from the amount reported in December, 1927.

December construction contracts let in the Pittsburgh District (Western Pennsylvania, West Virginia, Ohio and Kentucky) amounted to $39,093,800. This figure was 35 percent under the total for November of last year and there was an 8 percent decrease from the December, 1927, total. Included in last month's building and engineering record were:—$11,799,700, or 30 percent of all construction, for residential buildings; $10,451,200, or 27 percent, for public works and utilities; $8,714,000, or 22 percent, for industrial projects; and $3,490,100, or 9 percent, for commercial buildings.

The December contract total brought the amount of construction started in the Pittsburgh district during the past year up to $723,415,700, which was a drop of 5 percent from the total for the year 1927.

New contemplated projects as reported last month in this territory amounted to $41,666,500. There was a loss of 60 percent from the amount reported in November, 1928, and there was a drop of 37 percent from the total for December, 1927.

The Central West (Illinois, Indiana, Iowa, Wisconsin, Southern Michigan, Missouri, Kansas, Oklahoma and Nebraska) had $120,459,500 in contracts for new building and engineering work during the past month. The above figure was 11 percent below the total for the preceding month and there was a decrease of 27 percent from the total for December, 1927. Analysis of the December contract total showed the following important classes of work: $55,526,500, or 46 percent of all construction, for residential buildings; $20,468,000, or 17 percent, for commercial buildings; $16,714,200, or 14 percent, for public works and utilities, and $8,501,100, or 7 percent, for industrial projects.

During the year 1928 there was $1,934,774,900 worth of contracts let on new construction in the Central West, as compared with $1,812,848,700 for the year 1927, the increase being 7 percent.

New contemplated work reported in this area during the month of December reached a total of $216,185,400. This figure was 38 percent under the total for the preceding month and it was 45 percent less than the total for December, 1927.

During the past month the Northwest (Minnesota, the Dakotas and Northern Michigan) had $3,828,000 worth of new construction work started. The above figure was 34 percent under the total for November, 1928, and it was 74 percent less than the total for December, 1927. The following were the most important items in the December contract total: $1,170,800, or 31 percent of all construction, for residential buildings; $856,500, or 22 percent, for public works and utilities; $881,300, or 23 percent, for educational projects, and $448,400, or 12 percent, for commercial buildings.

Last month's building record brought the total amount of new construction started in the Northwest during the past year up to $80,190,700, being a loss of 4 percent from the amount started during the year 1927.

New work reported as contemplated during December in this territory amounted to $9,136,300, being a gain of 13 percent over the amount re-

BUILDING TYPES	N. EASTERN STATES	N. ATLANTIC STATES	S. EASTERN STATES	S. WESTERN STATES	MIDDLE STATES	WESTERN STATES	U. S. A.
Automotive	$14,469,400	$42,132,200	$7,447,000	$10,670,000	$56,322,200	$14,539,800	$145,580,600
Banks	15,730,000	53,312,600	1,148,400	5,984,000	56,999,800	12,859,000	146,033,800
Apartments	16,801,400	366,163,600	10,469,800	20,882,400	171,941,000	84,992,600	671,250,800
Apartment Hotels	2,640,000	83,560,400	4,972,000	15,554,000	97,979,200	41,925,400	246,631,000
Club, Fraternal, etc.	7,231,400	70,010,600	1,515,800	13,191,200	66,704,000	15,987,400	174,640,400
Community and Memorial	3,421,000	21,232,200	1,529,000	5,711,200	17,047,800	11,710,600	60,651,800
Churches	21,142,000	55,105,600	22,770,000	23,859,000	69,885,200	20,409,400	213,171,200
Dwellings (Below $20,000)	10,936,200	83,540,600	6,791,400	11,215,600	40,198,400	24,314,400	176,996,600
Dwellings ($20,000 to $50,000)	10,346,600	38,445,000	5,935,600	7,629,600	37,470,400	15,085,400	114,912,600
Dwellings (Over $50,000)	6,749,600	43,443,400	5,555,000	5,662,800	25,348,400	12,837,000	99,596,200
Hotels	21,659,000	95,763,800	14,212,000	45,513,600	101,378,200	66,149,600	344,676,200
Hospitals	18,860,600	110,105,600	4,606,800	12,749,000	73,035,600	33,169,400	252,527,000
Industrial	20,295,000	130,191,600	15,661,800	35,846,800	154,671,000	28,789,200	385,455,400
Office Buildings	12,485,000	244,101,000	4,859,800	41,296,200	300,979,800	87,760,200	691,482,000
Public Buildings	15,518,800	185,924,200	6,226,000	18,499,800	87,353,200	27,689,200	341,211,200
Schools	44,811,800	165,499,400	13,010,800	60,152,400	256,326,400	57,981,000	597,781,800
Stores	6,366,800	78,876,600	4,477,000	7,926,600	55,497,200	23,324,400	176,468,600
Theaters (All Types)	6,303,000	62,891,400	3,746,600	7,812,200	74,032,200	8,773,600	163,559,000
Welfare Y. M. C. A., etc	10,799,800	48,100,800	5,077,600	13,666,400	31,858,200	4,644,200	114,147,000
TOTAL VALUE OF NEW BUILDINGS	$266,567,400	$1,978,400,600	$140,012,400	$363,822,800	$1,775,028,200	$592,941,800	$5,116,773,200

New Construction Under Architect's Supervision..... $5,116,773,200

Buildings of All Types—Excluding Public Works and Utilities—Not Designed by Architects..... 2,192,020,000
(Estimated from Averages of Previous Years)

TOTAL ESTIMATED CONSTRUCTION FOR 1929..... $7,308,793,200
(Exclusive of Public Works and Utilities)

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Detailed Forecast of New Building Construction in 1929

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Excelsior Black	"AT" Ivory (Drop) Black

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- Resistant to after-yellowing
- Non-Settling
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and yet LOW PRICED

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for the finest of white enamels

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for unequaled mill white enamels

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for enamels resistant to chemical fumes

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for floor enamels and general mixing purposes

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for non-absorbent flat paints

COMBINATION DRIER
for drying Titanox Paints

Combination Drier

will be found indispensable in manufacturing White Enamels, Mill Whites, Flat Whites, etc., where it is desired to maintain minimum after-yellowing. It is very powerful, only 3% being required to dry linseed oil overnight, yet does not discolor the oil noticeably. Shows no precipitation when mixed with oil for indefinite periods.

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ported in the corresponding month of a year ago, but a loss of 16 percent from November, 1928.

December construction contracts in the Southeastern States (the Carolinas, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas and Louisiana) amounted to $33,895,900. This figure showed an increase of 14 percent over the November, 1928, total, but there was a loss of 31 percent from the December, 1927, record. Analysis of last month's building record showed the following items of note: $13,552,200, or 40 percent of all construction, for public works and utilities; $8,290,700, or 24 percent, for residential buildings; $5,662,500, or 17 percent, for commercial buildings, and $2,937,200, or 9 percent, for industrial projects.

New construction started in the Southeastern States in 1928 reached a total of $560,925,400, being a loss of 8 percent from the amount started during the year 1927.

Contemplated new projects as reported last month in this district amounted to $57,373,500, which was a gain of 36 percent over the amount reported in November, 1928, but a loss of 11 percent from the amount reported in December, 1927.

The State of Texas had $16,953,400 in contracts for new building and engineering work during the month of December. This figure showed an increase of 28 percent over the total for December, 1927, but there was a drop of 12 percent from the total for November, 1928. Included in last month's building record were: $4,995,200, or 29 percent of all construction, for public works and utilities; $3,592,400, or 21 percent, for residential buildings; $4,601,200, or 37 percent, for industrial projects, and $2,420,500, or 14 percent, for commercial buildings.

The December contract total brought the amount of new construction started in this State during the past year up o $231,408,800, being a gain of 6 percent over the amount started during the year 1927.

New work reported in contemplation during the past month in Texas amounted to $32,636,700. This figure shows an increase of 70 percent over the amount reported in the preceding month, but there was a loss of 9 percent from the amount reported in December, 1927.

Production and Sales

Curtailed production of ready mixed and semi-paste paints, varnishes, japans, and lacquers, and an increase in output of paste paints was indicated for the first half of 1928 by the Department of Commerce report covering the industry's operations during that period.

Sales during the period showed increases on white lead in oil, zinc oxide in oil, colors in japan, paste fillers, undercoatings, wall paints, enamels, other mixed paints, oleoresinous varnishes and stains and other varnishes. Declines were shown on other principal products.

Details of production, with comparable data for the previous six years follow:—

	Thous. of pounds. Paste paints.	Thous. of gals. Ready-mixed and semi-paste paints.	Thous. of gals. Varnishes, japans. and lacquers.
1928—First half...	208,162	39,939	19,270
1927—Year	396,080	86,591	67,163
Second half.	196,607	35,929	17,392
First half...	199,473	50,662	49,760
1926—Year	421,560	91,025	97,304
Second half.	212,537	45,623	49,086
First half...	209,023	45,402	48,218
1925—Year	465,285	99,709	82,017
Second half.	224,228	47,260	40,622
First half...	241,057	52,449	41,395
1924—Year	487,611	88,274	70,450
Second half.	233,867	43,152	34,301
First half...	253,744	45,122	36,149
1923—Year	439,175	82,070	70,731
Second half.	192,021	38,351	32,849
First half...	247,154	43,719	37,882
1922—Year	436,295	66,071	55,709
Second half.	227,703	33,440	28,877
First half...	208,592	32,631	26,832

The record of sales on principal paint and varnish products, as reported by the census bureau of the Department of Commerce for the first six months of 1928, with comparison with the corresponding period in 1927 follows:—

	Pounds—First six months. 1928.	1927.
Paste paints.....	189,108,684	188,743,000
White lead in oil.....	138,382,561	142,410,900
Combination whites...	10,624,781	9,541,800
Zinc oxide in oil.....	1,035,543	2,643,200
Colors in japan.....	1,806,220	1,430,600
Colors in oil.....	10,702,965	9,330,200
Other paste paints....	24,641,265	23,386,900
Paste fillers.....	264,402	6,552,800
	Gallons—	
Undercoatings	2,769,422	3,462,900
Wall paints.....	5,758,795	6,858,700
Enamels	6,355,018	6,698,500
Other mixed paints...	8,124,076	23,463,500
Oleoresinous varnishes and stains.....	13,269,255	15,578,800
Spirit varnishes.....	2,872,626	2,352,200
Other varnishes.....	2,351,693	3,446,000
Nitrocellulose clear lacquer	2,982,405	2,737,100
Lacquer enamel.....	5,652,714	5,290,400
Thinners for nitrocellulose lacquer...	5,582,250	4,732,100
Other lacquers.....	5,382,186	1,286,200

Detailed data covering sales for the closing half of 1928 are not yet available, but reports from a number of leading manufacturers in the trade indicate that volume for the last six months of the year showed material improvement over that for the first half on many lines. Weather conditions were rather favorable for outdoor painting work during the late summer and fall season, and with construction activities running at record high levels, considerable paint, varnish, enamel, etc., were required in finishing work on this building program.

Metallic Lead and Zinc

Pig lead prices were considerably lower in 1928 than in 1927. The market showed particular weakness during the second quarter of the year, but rallied later and moved upward, closing 1928 in strong position. Domestic producers were taking steps to correct the market situation by curtailing production. Consuming manufacturers, during the greater part of the year, were operating on a month-to-month basis, and there was relatively little future trading to strengthen the situation. A comparison of pig lead prices prevailing in the local market at the start of the various quarters of 1928 and the two preceding years, together with comparative prices at the close of the respective years, follows:—

	Per pound— 1928.	1927.	1926.
January 1.....	$0.0650	$0.0780	$0.0955
April 1.....	.0600	.0735	.0830
July 1.....	.0630	.0630	.0830
October 1.....	.0650	.0625	.0870
December 31.....	.0650	.0650	.0780

The output of primary domestic desilverized lead in 1928 was about 349,000 tons; of soft lead about 226,000 tons, and of desilverized soft lead about 53,000 tons, making a total output from domestic ores of about 624,000 tons of refined lead, according to statistics compiled by the United States Bureau of Mines, Department of Commerce. Corresponding figures in 1927 were 378,889 tons of desilverized lead, 233,944 tons of soft lead and 55,487 tons of desilverized soft lead, making a total of 668,320 tons. The output of lead smelted and refined from foreign ore and bullion was about 156,000 tons, as compared with 128,210 tons in 1927. The total primary lead smelted or refined in the United States in 1928 was thus about 780,000 tons, as compared with a total of 796,530 tons in 1927—a decrease of about 2 percent. The output of antimonial lead in 1928 was about 25,000 tons, as compared with 24,347 tons in 1927.

The imports of refined pig lead for eleven months amounted to 605 tons, of which 546 tons came from Mexico. The base bullion imported during the same period contained 114,836 tons of lead, almost wholly from Mexico. The exports of lead of foreign origin amounted to nearly 98,000 tons, as compared with 122,734 tons exported in the entire year 1927. Exports of lead of domestic origin amounted to 10,858 tons, as compared with 2,533 tons exported in 1927. Exclusive of stocks of lead at smelters and refineries and estimating the amount of lead exported with benefit of drawback, for which figures are not available, it is calculated that the new supply of lead made available for consumption in 1928 was about 653,000 tons, as compared with 663,412 tons in 1927.

Slab zinc prices showed a steadily advancing trend during 1928. Starting off the year at 5.95c. per pound on spot, the market worked up progressively to a high of 6.70c. per pound, closing 1928 at that level. Producers were operating on a greatly curtailed scale during the year, and were taking steps to improve the statistical position of the market in every way. The European zinc trade was reported organized into a cartel during the closing quarter of 1928, and there was reported that the American zinc industry was to co-operate with the European trade in the control of world markets, although no confirmation of this report could be obtained. A comparison of slab zinc prices prevailing in the local market at the start of the various quarters of 1928 and the preceding two years, together with comparative prices at the close of the respective years, follows:—

	Per pound— 1928.	1927.	1926.
January 1.....	$0.0597½	$0.0740	$0.0905
April 1.....	.0605	.0690	.0752½
July 1.....	.0647½	.0650	.0775
October 1.....	.0660	.0650	.0775
December 31.....	.0670	.1597½	.0735

The output of primary metallic zinc from domestic ores in 1928 was about 582,100 tons and that from foreign ores was about 12,400 tons, a total of 594,500 tons, as compared with 576,960 tons from domestic ores and 15,556 tons from foreign ores, a total of 592,516 tons in 1927. In addition to the output of primary zinc there was an output of about 52,100 tons of redistilled secondary zinc, as compared with 42,784 tons in 1927, making a total supply of distilled and electrolytic zinc in 1928 of about 646,600 tons, composed of 238,200 tons of high grade and intermediate, 80,100 tons of select and brass special, and 328,300 tons of prime western zinc. Of the total output of primary zinc in 1928, 160,000 tons was electrolytic zinc produced in Montana and Idaho, 105,000 tons was made in Pennsylvania, 104,000 tons in Illinois, 103,000 tons in Oklahoma, and the remainder in Arkansas, Indiana, Kansas, Texas and West Virginia.

The imports of slab zinc for eleven months amounted to only 3 tons. The exports of slab zinc made from domestic and foreign ores amounted to 27,855 tons, including 3,869 tons of rolled zinc. The stock of zinc reported at smelters November 30 was about 41,000 tons. No slab zinc was reported in warehouse. The apparent consumption of primary zinc in 1928 was about 578,000 tons, as compared with 516,371 tons in 1927.

The total number of retorts at the 21 zinc smelters that operated during all or a part of the year was about 107,000. Of that number, about 63,400 were reported in operation at the end of November and about 63,400 were expected to be in operation at the end of the year. At the end of 1927 there were 77,388 retorts in operation at these 21 plants.

Pigments

With prices for pig lead and slab zinc under 1927 levels, markets for principal pigments made from these metals reacted downward in sympathy last year. Corroders reduced their prices for dry pigments in casks in conformity with the price changes in the metal market, each change of 25 points or more in pig lead calling for a quarter-cent movement in the same direction on dry red lead, litharge, and orange mineral in casks.

There was little change reported in the remainder of the market. Lithopone prices for the year were an eighth cent per pound under 1927 price levels, but zinc oxides were well held. Titanium pigment was lower, reflecting increasing competition on this product, as well as wider distribution and a correspondng reduction in production and operating costs.

Corroders have not as yet reported on their sales totals for 1928, but it is believed that the figures for the year will just about average up on a par with 1927 sales volume. Curtailed consumption was reported on a few items, but this was offset in part by expanding buying of other lead pigments.

With the country witnessing another record-breaking year in the construction field, it was but natural that demand for principal lead paint products would be well maintained, in keeping with the heavy requirements for finishing work. An important factor in the market situation last year was the exceptionally heavy volume of industrial and public utility building projects, which called for large quantities of red lead for protective coatings during the building operations. The new bridge now under construction between New York City and New Jersey alone calls for huge quantities of such protective lead coating.

The markets for lead products in oil, in kegs, went through the entire year without price change, although quotations prevalent during the year were materially under those in effect during the greater part of 1927. Prices for dry products in casks dipped during mid-year, on a lower pig lead market, but recovered by the close of the year, and closed 1928 at the same level that prevailed at the start of the year.

Lithopone manufacturers, in their preliminary reports, indicate that consumption of their product during 1928, insofar as the paint trade is concerned, established new high records. The lithopone market was in steady position throughout the year, although toward the close of 1928, with the zinc market on the upgrade, manufacturers were discussing the possibility of a higher market price for the pigment. No increase materialized, however, and business for the first half of 1929 has been contracted at the same price basis which ruled through 1928. Makers of lithopone anticipate a continued widening market for their product this year, and have made plans for larger production.

Barytes markets underwent no important modification during 1928. Producers succeeded in booking the greater part of their production on contracts for the year, and consequently there was very little spot trading witnessed. Quotations named in 1928 contracts have been carried over into the current year.

Sales of zinc oxide were fair during 1928, but the market was rather irregular nevertheless. Prices were well held on all grades, but demand was exceedingly sporadic. Consuming manufacturers had evidently adopted a policy of letting producers carry the burden of storing stocks, and most of the demand last year was confined to small quantities for prompt shipment. Toward the close of 1928, there was some inclination shown by buyers to stock a little ahead of actual needs, this change being prompted by the stronger market for zinc metal, and the similar position of pig lead. Domestic producers have booked a substantial volume of zinc oxide business for 1929 with the paint trade, although most of this, in conformity with trade custom, carries only to the first half of the year. Imported zinc oxide prices were well maintained during 1928, with a moderate amount of business reported.

Dry Colors

The past year was noteworthy in dry color trade circles, principally for the marked improvement which developed in selling practices, and the firming-up in the market position on a number of colors, due to the higher raw materials costs. While producers were still questing volume, there was less inclination shown to attain large sales totals at the expense of profits, and while considerable price shading was still being done on competitive business, such cutting was mainly on the unusually large contract orders. On the general run of business, color makers were showing a tendency to adhere rather closely to listed quotations.

Actual data on tonnage for 1928 is lacking as yet, but reports from various manufacturers indicate that volume showed a satisfactory gain on the principal colors. Some sellers reported that their business, in point of volume, was running considerably ahead of 1927 totals, while in other instances sellers were content to keep their sales totals abreast of comparable figures for the previous year.

Carbon black worked into stronger position last year, and there were indications that a further stiffening in the market might be looked for. While production continued large, export sales were running into heavy totals, and domestic consumption was also on the increase. Producers had made considerable progress in cutting down their heavy surplus stocks, and a number of the weaker market interests appeared to have been eliminated through purchases, consolidations, etc., on the part of the larger producers. The bulk of last year's business with the paint trade was done on the basis of 6½c. per pound, f.o.b. works, but during the second half of 1928 producers advanced the market 1c. to 7½c. per pound and were holding firm at that figure at the year-end. There were few developments of interest in other blacks during 1928. Black oxide of iron continued to meet with a more active inquiry, and was being largely used in special finishes for steel and iron construction work. With a continued heavy building program indicated, sellers of black iron oxide look for further expansion in consumption of their product. Prices last year held firm at 4½c. per pound, the same quotation that prevailed throughout 1927.

Definite improvement in the market situation on iron blues materialized last year. During the first six months of 1928 selling competition continued sharp and makers were shading listed prices on the general run of business. Toward mid-year, however, the market firmed up, on a stronger market for principal raw materials and an evident general realization of the futility of price cutting as a method of stimulating sales. During the closing half of 1928 sellers in most instances were adhering to a 32c. price on their business on iron blues, and this figure has been named in 1929 contracts in many instances, although on some of the smaller contracts it is understood that 33c. to 34c. business has been written.

In the market for browns there was very little change witnessed during 1928. Never a speculative market, the earth colors were particularly featureless last year. Importers and marketers had lined up the bulk of their business on contracts early in the year and deliveries against these contracts accounting for most of the year's activity. Quotations, on the average, were slightly higher than in 1927, this being due to increases in production costs.

Chrome green, c. p., was the outstanding feature of the market for this color during 1928. While chrome green had been more or less a speculative item during the previous several years, it developed considerable stability in 1928 and was steady and unchanged throughout the year. Higher production costs were in part responsible for this change, although a lightening of selling pressure and a general tendency to hold for listed prices also contributed to the strength on this item. Routine activity on other greens prevailed during 1928, no appreciable change in the price situation developing.

Strength in carmine No. 40 and English vermilion featured the market for reds last year. The former color showed a net advance of $1.25 during the year, attaining a high of $6.50 per pound, which was $1 over the high for 1927. The low during 1928 on this color, $5.25 per pound, was 25c. over the 1927 low. Higher markets for cochineal, with a shortage of that material, influenced the course of carmine No. 40 last year, and at the start of 1929 there are indications that a further upward movement is in sight, some sellers now quoting 50c. per pound over the 1928 high. Vermilion (English quicksilver) red showed considerable fluctuation during the year, moving in conformity with changes in the quicksilver market. The high of $2.00 per pound in 1928 was 5c. over the 1927 high, while the low figure of $1.75 a pound last year topped the previous year's low by 20c. per pound. Indian red was well maintained throughout the year, and came in for good buying. A little price cutting on the toners developed during 1928, but at the close of the year the market had recovered and was fairly well maintained.

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METAL SIGNS AND CANCO DISPLAY FIXTURES

New York Chicago San Francisco

As has been the case for several years past, chrome yellow continued one of the most active colors in the list. During the greater part of 1928 chrome yellow was under more or less sharp competition, and the price basis was in consequence rather unsettled. Some makers were apparently still using chrome yellow as a "leader" and were attracting business on their general line through low prices on this product. The market opened the year at 16c. per pound, 1c. under 1927 high and at the low point for that year. By the end of the first quarter the declining market for pig lead, together with sales pressure from a number of quarters, had weakened the situation, and the open market was quoted at 15½c. a pound. In May the market yielded further and was down to 15¼c. per pound, with reports indicating that business in a few instances had been written down to 14½c. By mid-year, however, the market position had improved, and the spot price was up ¼c. to 15½c. per pound, closing the year at that level. Changes on other yellows were along routine lines, demand holding up well, and the situation showing little change from the preceding year.

Colors in Oil

Markets were well maintained throughout the year, and preliminary reports indicate that volume of business during 1928 showed improvement over 1927 sales totals. With markets for the principal raw materials in fairly stable position throughout 1928, oil color manufacturers were able to hold their markets without important price disturbance. During the summer season the undertone was unsettled somewhat by price cutting on house paints, but this disturbance did not extend to oil colors, and the market went through the remainder of the year without alteration. Total sales of colors in oil for the first half of the year amounted to 18,939,430 pounds, as compared with 9,330,200 pounds in the first six months of 1927 and 8,694,400 pounds in the first half of 1926.

The clean-up paint-up campaign was credited with creating considerable new business for oil colors during the year, and manufacturers reported that their sales through retail paint and hardware stores had developed in satisfactory volume.

Continued activity was reported in the industrial market during the year, and the industry anticipates further gains in this direction during 1929.

Varnish Gums

Prices for principal varnish gums averaged lower in 1928 than in the previous year. While the market was largely in favor of the buyer during the early part of the year, the situation showed some improvement in this respect as the year progressed, and during the closing half conditions were much better from the standpoint of the seller.

Developments in the kauri gum market were rather interesting during the year. The New Zealand Kauri Gum Control Commission proposed measures for standardizing all grades of kauri gum, and were reported planning a campaign of exploitation in principal consuming markets, in an effort to develop larger consumption of this type of gum. Up to the close of the year, however, the plans of the control commission in this respect were still "on paper," and the kauri gum market in this country had shown little net change for the year. While varnish manufacturers were still using kauri gum in fair quantities, it was obvious that lacquers were showing further expansion in popularity, and that little added consumption of kauri gum might be looked for, unless prices should show a material recession. Toward the latter part of the year there was a perceptible gain in buying interest on the lower grades of kauri gum, but on the higher qualities business was still of extremely limited volume.

Ester gums came in for increasing consumption during 1928, but competitive conditions within the industry were sharper, and prices were lower than was the case during the previous year. During the closing half of 1928 manufacturers of ester gums were confronted with steadily rising prices for rosin, making for higher production costs. Selling competition was so keen, however, that the makers were forced to absorb much of the increased production cost themselves.

Dammar gum was slightly lower last year than was the case during 1927. Batavia gum showed a high of 25c. and a low of 22c. per pound for the year, as compared with 26c. and 22¼c., respectively, in the previous year. Singapore grades were also slightly lower.

Manila copal gum came in for better buying in 1928, and the market was in rather strong position. Pale nubs were well held at 15½c. a pound during the closing quarter of 1928, this being 1½c. per pound over the top price level achieved during the preceding year. The low for 1928, which was 14c. per pound, was on a par with the high price for 1927. Pontianak grades, however, were lower last year than was the case in 1927, showing a high of 14c. a pound and a low of 13½c., as compared with 15c. and 13½c., respectively, in the previous year.

Varnish gum importers last year succeeded in organizing an association of importers, taking in the principal factors of the trade. Efforts for the organization of such an association had been in progress for several years, and it was felt that consummation of the group would make for an elimination of many questioned trade practices, and would make for better marketing conditions generally. At the last meeting of the year held by the importers it was voted to accept foreign shippers of varnish gums as associate members.

Driers

Increasing production costs, due to firmer markets for principal raw materials, brought about a marked strengthening in the position of the driers market last year. This was particularly true of stearates, and to a lesser degree, resinates, prices for both rosin and stearic acid showing sharp advances during 1928.

The past year was notable for a partial return to the contract method of buying on the part of consuming manufacturers in the paint and varnish trades. During the previous several years, buyers had gotten away from the contract method of operating rather thoroughly, and in 1927 the bulk of the business was spot. Last year, however, with markets rising and stocks not always easily obtainable when wanted, consuming manufacturers modified their method of operation, and during the closing quarter of the year were back to a basis of covering thirty to ninety days ahead.

Volume of business for the principal driers showed improvement, insofar as the paint and varnish trades were concerned. A little falling-off in volume was reported on some grades which had previously been largely used in "non-chatter" lubricating oils.

Lacquer Materials

The remarkable growth of the lacquer materials market during the year 1928 was largely attributed to the fact that every automobile manufacturer of note was using nitrocelluose lacquers in a year of steadily increasing automobile production. Quite early in 1928 it became evident that the automotive industry was about to experience one of its biggest years. Moreover, an unusual demand appeared from consumers in other trades and industries quite early in the year. There were steady gains in the demand for lacquer finishes from master painters as well as from decorators, although a certain amount of competition between the principal producers to secure the widest possible market for their products resulted in a rather easy undertone during the first part of the year.

The automobile industry was operating at a high rate as early as April of last year and was in the market continuously thereafter for large quantities of lacquer materials. June deliveries of automobiles touched the highest levels in recent years due to the heavy movement which had been under way at retail. Thereafter, the new presentations for the summer months were received with a considerable degree of interest. Production in August reached a new high peak of some 485,000 cars, against a previous record of 462,809 cars in April, 1926. New production records were established during the first nine months of the year when 3,469,075 cars were manufactured. All of the preliminary estimates that automobile production would break new records in 1928 were eventually borne out in the final showing for the year when it developed that the total production for 1928 was 4,607,000, an increase of about 1,027,000 over 1927. The output of passenger cars alone was 3,826,613, or 29.9 percent greater than in 1927, while that of trucks was 530,771, an increase of 16.7 percent over the previous year. And this was not all. It appeared as more than likely that 1929 would prove to be another banner year in the automobile industry with the outlook favoring even a larger production than in the year before.

Despite consistent gains in the volume of buying of lacquer materials during the early part of last year the market developed irregular tendencies. Foreign competition in ethyl acetate showed itself early in the year and this product pursued an irregular course thereafter. Two new synthetic solvents for nitrocellulose and other cellulose compounds were announced by the producers early last year. One of these was ethyl lactate, which was being commercially prepared for the first time by an entirely different process and ethyl oxybutyrate, which was offered as an unusually strong solvent for nitrocellulose and cellulose acetate. The list of materials suitable as lacquer solvents was added to by two new products. One of these was carbitol or diethylene glycol mono-ethyl-ether, which was quoted at about 10c. to 12c. per pound and the other was butyl carbitol or diethylene glycol mono ethyl ether, which was best adapted as a solvent for gums, paper, etc. The growing importance of the ethylene glycol derivatives was recognized. The effort of the producers was to broaden the market for their products. Thus, they were looking into the possibilities of introducing them into a number of fields, which had not hitherto shown any great interest. Definite signs of interest were noted from the textile, soap manufacturing and oil refining in-

The more important products in the lacquer materials field appeared to be pursuing irregular tendencies for the greater part of the year. The producers of butyl alcohol cut prices to the extent of ¾c. per pound early in the year, establishing a basis of 18¼c. per pound tanks, works. Other derivatives of butyl alcohol were quick to follow with a decline of 4c. in butyl propionate to 27c. per pound in drums, while butyl acetate while not officially reduced was understood to be available at a concession of 10c. per gallon from previous price basis or at $1.47 per gallon in drums. A number of other price revisions were named during March, including ethyleneglycol monobutyl ether 14c. lower at 76c. per pound in tank cars, 27c. in car lots, drums, 28c. less than car lots, drums and 31c. per pound in single drums; ethylene monoethyl ether was reduced 2c. per ponnd, establishing the price at 19c. per pound in tank cars, 20c. in car lots, drums, 21c. less than car lots, drums, and 24c. per pound in single drum lots; ethylmoneoethyl ether acetate was lowered 3c. per pound to a basis of 21c. per pound in tank cars. 22c. in car lots, drums, 23c. less than car lots, drums, and 26c. per pound in single drum lots, but in the first week in April the producers advanced their schedules on the latter 1c. per pound and quoted 22c. per pound in tanks, 23c. car lots, drums, and 23½c. to 26c. per pound less than car lots, drums.

Activity in the artificial leather trades reached rather impressive totals during the month of March as considerable quantities were being taken for automobile upholstery. This tended to promote sales of all sorts of lacquer materials. There was enough foreign material on the markets to keep competition rather stiff throughout the year. Some of the lacquer materials producers who had been utilizing celluloid scrap in their productions turned to the use of nitrated cotton.

It was also of interest to note that throughout the year the consumption of lacquer and pyroxylin products was holding up well to normal. During April the producers of amyl alcohol from pentane announced a sharp downward revision. The car lot works drum price was reduced 13c. to $1.77 per gallon and the price for less than car lots, drums, 12c. to $1.85 delivered, and the price in tanks at works 12c. to $1.75 per gallon.

About this time also one of the more important base products, cellulose acetate, was cut 5c. per pound and established at $1.20 per pound in bags. The competition for business in butyl acetate was also keener during the summer months and this product could be had at as low as $1.38 per gallon in drums, and subsequently down to $1.35 per gallon in drums.

All this time the large lacquer materials producers continued to experiment with new products and their formulas were being rearranged periodically. As early as May many of them had foreseen a possible toluol shortage, and many of them were at that time figuring on the substitution of petroleum hydocarbons. Just before the turn of the half year, producers reduced amyl alcohol from pentane by 10c. per gallon, placing it at $1.65 per gallon, tanks, works; $1.67 car lots, drums, and $1.75 less than car lots, drums, with smaller quantities quoted at $2.25 per gallon. Under keen competition butyl acetate finally got down to a basis of $1.35 per gallon during July. The advancing tendency of toluol was giving the producers no small amount of concern at this time. In August acetate of lime took a 50c. per 100 pounds advance, establishing it at $4 per 100 pounds, and this was followed by advances of 5c. per gallon, respectively, in butyl acetate as well as in ethyl acetate. The former was then established at $1.40 per gallon, car lots, tanks; $1.42 car lots, drums, and $1.45 per gallon less than car lots, drums, while ethyl acetate regular closed the year at $1 per gallon in tanks, $1.03 car lots, drums, and $1.05 per gallon, less than car lots, drums. A reduction was posted in methyl acetate, which brought it down to 85c. per pound.

A steady broadening of the market continued to show itself during the Fall months. Production schedules at plants were being well maintained at this time as an active call was soon to be heard from numerous manufacturers of novelties for the Christmas trade. One of the price developments at the time was a 5c. reduction in triacetin to 32c. to 36c. per pound in drums. An easier tone was also evident in dibutyl phthalate, which could be purchased for 26½c. to 27c. per pound in drums. Early in November the fresh 50c. advance which was named by producers of acetate of lime to a basis of $4.50 per 100 pounds prompted a fresh advance in ethyl acetate anhydrous to $1.20 per gallon in tanks; $1.22 car lots, drums, and $1.25 per gallon, less than car lots, drums. By the middle of November the shortage of toluol had grown quite acute and had forced some of the lacquer materials manufacturers to substitute xylol. In the closing days of the year foreign butyl acetate, which had been competing with the domestic, was raised in sympathy with the higher market for acetic acid. The quotation for the foreign was established at $1.48 in tanks and $1.50 in drums, compared with $1.40 and $1.42 per gallon, respectively, for the domestic product. The maintenance of automobile production schedules at a high rate during the closing days of the year kept the market for primary lacquer materials in a constant state of activity. Some of the wood chemicals utilized as raw materials were in extremely limited supply and the same continued true of toluol. Despite the sharp upward movement in corn at the end of the year, producers of butyl alcohol maintained their price schedules.

Other Paint Materials

There was very little change in this division of the market during the past year. The bulk of the business was along contract lines throughout, and there was very little price fluctuation in the spot market.

Imported casein prices were lower throughout the greater part of 1928 than was the case during the previous year, this being due in parts to heavier receipts of the foreign material. Imports during the first eleven months of the year amounted to 26,716,468 pounds, as compared with 23,250,633 pounds in the corresponding period of 1927. Larger quantities of casein were being utilized by the manufacturers of wall finishes.

There were few changes of outstanding importance in the remainder of the list.

Window Glass

The domestic market showed some improvement during 1928, and importers were anticipating better conditions for 1929. Strong efforts were made by domestic manufacturers during the latter part of the year for an increase in import duties, and it was expected in trade circles that favorable action on the industry's application for more protection against foreign glass would be forthcoming. Imports of window glass for the first 11 months of 1928 were 61,551,962 square feet, as compared with 77,034,736 square feet in the corresponding period of 1927.

Plate glass manufacturers were confronted with continued sharp competition last year. Agitation on the part of manufacturers for a higher tariff on foreign glass resulted in announcement January 17, this year, that, effective thirty days following announcement, the tariff would be increased on the first bracket from 12½c. to 16c. per square foot; on the second bracket from 15c. to 19c., and on the next from 17½c. to 22c. Imports of plate glass for the first 11 months of 1928 amounted to 16,338,004 square feet, against 15,619,959 square feet in the corresponding period of 1927. Domestic production for 1928 aggregated 130,649,435 square feet, compared with 111,390,933 square feet in the previous year.

Paint and Varnish Materials: Record of Prices

Metals

Pig Lead

	Per pound— 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.0780	$0.0740	$0.0650	$0.0650
February	.0740	.0702½	.0650	.0625
March	.0765	.0740	.0615	.0600
April	.0745	.0660	.0610	.0610
May	.0700	.0640	.0620	.0610
June	.0640	.0640	.0630	.0620
July	.0660	.0620	.0630	.0620
August	.0675	.0650	.0630	.0620
September	.0675	.0625	.0650	.0640
October	.0625	.0625	.0650	.0650
November	.0625	.0600	.0650	.0635
December	.0650	.0630	.0650	.0635
Year	.0780	.0600	.0650	.0600

Zinc

	Per pound— 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.0735	$0.0672½	$0.0602½	$0.0595
February	.0715	.0685	.0602½	.0575
March	.0720	.0700	.0605	.0580
April	.0692½	.0660	.0615	.0605
May	.0650	.0635	.0647½	.0617½
June	.0662½	.0642½	.0650	.0645
July	.0670	.0650	.0655	.0647½
August	.0670	.0657½	.0660	.0655
September	.0660	.0652½	.0660	.0660
October	.0650	.0620	.0660	.0660
November	.0620	.0595	.0670	.0660
December	.0622½	.0597½	.0670	.0670
Year	.0735	.0595	.0670	.0575

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Chrome Greens Chrome Yellows
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Distillers of Coal Tar Products

Pigments

Barytes

October 18, 1871, the price was 1⅞c. to 2¼c. per pound; 1881, $21 to $25 per ton; 1891, $18 to $20; 1901, $17 to $20; 1911, $18.50 to $20.50; 1913, $19 to $20; 1920, August, $40.

	Per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$23.00	$23.00	$23.00	$23.00
February	23.00	23.00	23.00	23.00
March	23.00	23.00	23.00	23.00
April	23.00	23.00	23.00	23.00
May	23.00	23.00	23.00	23.00
June	23.00	23.00	23.00	23.00
July	23.00	23.00	23.00	23.00
August	23.00	23.00	23.00	23.00
September	23.00	23.00	23.00	23.00
October	23.00	23.00	23.00	23.00
November	23.00	23.00	23.00	23.00
December	23.00	23.00	23.00	23.00
Year	23.00	23.00	23.00	23.00

Blanc Fixe, Dry

July 21, 1880, the price was 3½c.; October 18, 1881, 3¼c.; 1891, 2⅝c. to 3c.; 1901, 2½c. to 2¾c.; 1911, 2⅞c. to 4c.; 1913, 2⅝c. to 4c.; 1920, August, 6½c.

(Barrels, carlots, f.o.b. works)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.04½	$0.04	$0.04½	$0.04½
February	.04	.04	.04½	.04½
March	.04	.04	.04¼	.04¼
April	.04	.04	.04¼	.04¼
May	.04	.04	.04¼	.04¼
June	.04½	.04	.04¼	.03½
July	.04½	.04	.03½	.03½
August	.04	.04	.03½	.03½
September	.04	.04	.03½	.03½
October	.04½	.04	.03¾	.03½
November	.04	.04	.03¾	.03¾
December	.04	.04	.03¾	.03¾
Year	.04¼	.04	.04¼	.03½

White Lead, Basic Carbonate

Ocotber 18, 1871, the price was 10c. to 10¼c.; 1881, 6¾c. to 7c.; 1891, 6¾c. to 7¼c.; 1901, 4¾c. to 5c.; 1911, 5½c. to 6c.; 1913, 5¾c.; 1917, July, 11½c.

(Dry, in casks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.09¾	$0.09¾	$0.0850	$0.0850
February	.09¾	.09¾	.0850	.0850
March	.09¾	.09¾	.0850	.0850
April	.09¾	.09¾	.0850	.0850
May	.09¾	.09¾	.0850	.0850
June	.09¾	.09	.0850	.0850
July	.09	.09	.0850	.0850
August	.09	.09	.0850	.0850
September	.09	.09	.0850	.0850
October	.09	.09	.0850	.0850
November	.09	.08½	.0850	.0825
December	.08½	.08½	.0825	.0825
Year	.09¾	.08½	.0850	.0825

White Lead, Basic Carbonate, in Oil

October 18, 1871, the price was 11½c.; 1881, 7¼c. to 7½c.; 1891, 6¾c. to 7½c.; 1901, 5¾c. to 6½c.; 1911, 7¼c. to 7½c.; 1913, 7¼c.; 1917, July, 11½c.

(Carload lots)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.1215	$0.1215	$0.1073	$0.1073
February	.1215	.1215	.1073	.1073
March	.1215	.1174	.1073	.1073
April	.1174	.1174	.1073	.1073
May	.1174	.1174	.1073	.1073
June	.1174	.1113	.1073	.1073
July	.1113	.1113	.1073	.1073
August	.1113	.1113	.1073	.1073
September	.1113	.1113	.1073	.1073
October	.1113	.1113	.1073	.1073
November	.1113	.1073	.1073	.1073
December	.1073	.1073	.1073	.1073
Year	.1215	.1073	.1073	.1073

White Lead, Basic Sulphate

December 7, 1909, the price was 5¾c. to 6c.; October 19, 1911, 5¾c. to 5½c.; 1913, 5½c.; 1917, August, 11c.

(Dry, in casks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.0900	$0.0900	$0.0775	$0.0775
February	.0900	.0900	.0775	.0775
March	.0900	.0900	.0775	.0775
April	.0900	.0900	.0775	.0775
May	.0900	.0900	.0775	.0775
June	.0900	.0825	.0775	.0775
July	.0825	.0825	.0775	.0775
August	.0825	.0825	.0775	.0775
September	.0825	.0825	.0775	.0775
October	.0825	.0825	.0775	.0775
November	.0825	.0775	.0775	.0775
December	.0775	.0775	.0775	.0775
Year	.0900	.0775	.0775	.0775

Red Lead

October 18, 1871, the price was 8¾c. to 10c.; 1881, 6½c. to 6¾c.; 1891, 6¾c. to 7½c.; 1901, 5½c. to 6c.; 1911, 6½c. to 7c.; 1913, 7c. to 7½c.; 1917, July, 13c.

(Dry, in casks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.1125	$0.1075	$0.1000	$0.1000
February	.1075	.1075	.1000	.0975
March	.1075	.1075	.0950	.0950
April	.1050	.1025	.0950	.0950
May	.1025	.1000	.0950	.0950
June	.1000	.1000	.0975	.0975
July	.1000	.1000	.0975	.0975
August	.1025	.1000	.0975	.0975
September	.1000	.0975	.1000	.0975
October	.0975	.0975	.1000	.1000
November	.0975	.0975	.1000	.1000
December	.1000	.1000	.1000	.1000
Year	.1125	.0975	.1000	.0950

Litharge, American

October 18, 1871, the price was 9c. to 9½c.; 1881, 6½c. to 6¾c.; 1891, 6¾c. to 7½c.; 1901, 4¾c. to 5½c.; 1911, 5½c. to 6c.; 1913, 6¾c. to 7c.; 1917, July, 12½c.

(Commercial Powdered, Casks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.1075	$0.1025	$0.0900	$0.0900
February	.1025	.1025	.0900	.0875
March	.1025	.1025	.0850	.0850
April	.1025	.0975	.0850	.0850
May	.0975	.0900	.0850	.0850
June	.0900	.0900	.0875	.0875
July	.0900	.0900	.0875	.0875
August	.0925	.0900	.0875	.0875
September	.0900	.0875	.0900	.0875
October	.0875	.0875	.0900	.0900
November	.0875	.0875	.0900	.0900
December	.0900	.0900	.0900	.0900
Year	.1075	.0875	.0900	.0850

Lithopone, American

May 13, 1901, the price was 5c. to 5½c.; October 18, 1901, 5c. to 5¼c.; 1911, 3¾c. to 4c.; 1913, 3¾c. to 4¼c.; 1920, July, 8¼c.

(Bags, car lots)

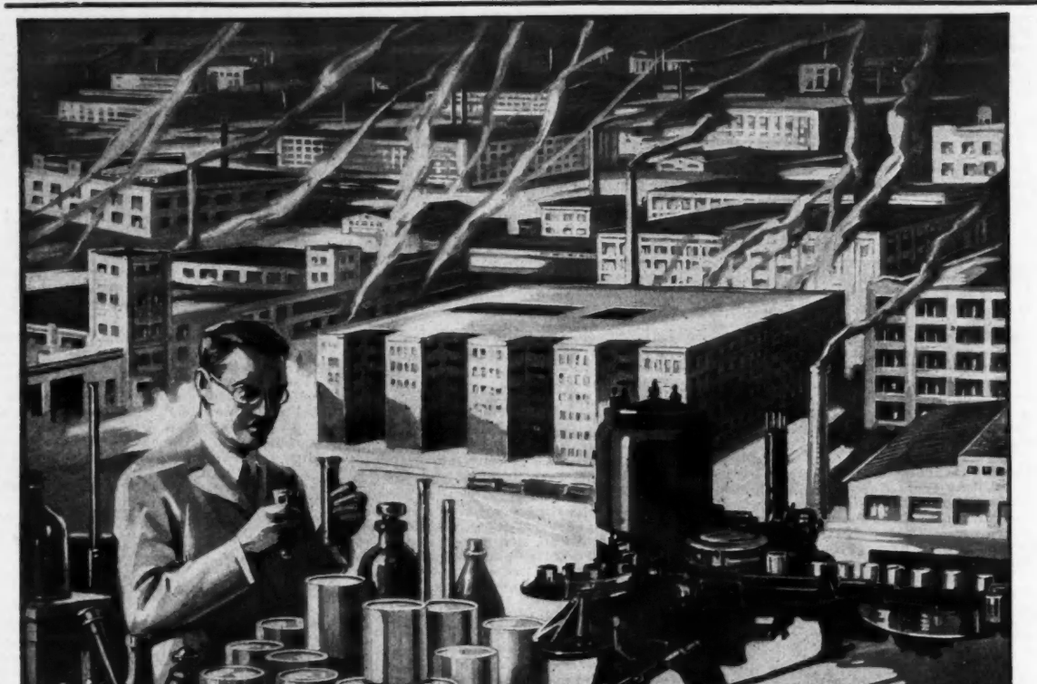
	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.05¾	$0.05¾	$0.05¼	$0.05¼
February	.05¾	.05¾	.05¼	.05¼
March	.05¾	.05¾	.05¼	.05¼
April	.05¾	.05¾	.05¼	.05¼
May	.05¾	.05¾	.05¼	.05¼
June	.05¾	.05¾	.05¼	.05¼
July	.05¾	.05¾	.05¼	.05¼
August	.05¾	.05¾	.05¼	.05¼
September	.05¾	.05¾	.05¼	.05¼
October	.05¾	.05¾	.05¼	.05¼
November	.05¾	.05¾	.05¼	.05¼
December	.05¾	.05¾	.05¼	.05¼
Year	.05¾	.05¾	.05¼	.05¼

Orange Mineral, American

October 18, 1871, the price was 11½c. to 12c.; 1881, 8c. to 12½c.; 1891, 8½c. to 8¾c.; 1901, 8c. to 8¼c.; 1911, 8½c. to 10c.; 1913, 8½c. to 10c.; 1917, July, 15c.

(Casks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.1350	$0.1300	$0.1200	$0.1200
February	.1300	.1300	.1200	.1175
March	.1300	.1300	.1150	.1150
April	.1300	.1250	.1150	.1150
May	.1250	.1200	.1150	.1150
June	.1200	.1200	.1175	.1175
July	.1200	.1200	.1175	.1175
August	.1225	.1200	.1175	.1175
September	.1200	.1175	.1200	.1175
October	.1175	.1175	.1200	.1200
November	.1175	.1175	.1200	.1200
December	.1200	.1200	.1200	.1200
Year	.1350	.1175	.1200	.1150



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"It's Better Packed In Tin"

Zinc Oxide, French Process, Red Seal

October 18, 1871, the price was 7¾c.; 1881, 4½c. to 5c.; 1891, 8c.; 1901, 8½c. to 8⅝c.; 1911, 8¾c. to 8½c.; 1913, 7c. to 7½c.; 1917, April, 17½c.

(Bags, car lots)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.09⅝	$0.09⅝	$0.09⅝	$0.09⅝
February	.09⅝	.09⅝	.09⅝	.09⅝
March	.09⅝	.09⅝	.09⅝	.09⅝
April	.09⅝	.09⅝	.09⅝	.09⅝
May	.09⅝	.09⅝	.09⅝	.09⅝
June	.09⅝	.09⅝	.09⅝	.09⅝
July	.09⅝	.09⅝	.09⅝	.09⅝
August	.09⅝	.09⅝	.09⅝	.09⅝
September	.09⅝	.09⅝	.09⅝	.09⅝
October	.09⅝	.09⅝	.09⅝	.09⅝
November	.09⅝	.09⅝	.09⅝	.09⅝
December	.09⅝	.09⅝	.09⅝	.09⅝
Year	.09⅝	.09⅝	.09⅝	.09⅝

Zinc Oxide, French Prrocss, White Seal

(Barrels, car lots)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.1162½	$0.1162½	$0.1162½	$0.1162½
February	.1162½	.1162½	.1162½	.1162½
March	.1162½	.1162½	.1162½	.1162½
April	.1162½	.1162½	.1162½	.1162½
May	.1162½	.1162½	.1162½	.1162½
June	.1162½	.1162½	.1162½	.1162½
July	.1162½	.1162½	.1162½	.1162½
August	.1162½	.1162½	.1162½	.1162½
September	.1162½	.1162½	.1162½	.1162½
October	.1162½	.1162½	.1162½	.1162½
November	.1162½	.1162½	.1162½	.1162½
December	.1162½	.1162½	.1162½	.1162½
Year	.1162½	.1162½	.1162½	.1162½

Zinc Oxide, French Process, Green Seal

(Bags, car lots)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.1037½	$0.1037½	$0.1037½	$0.1037½
February	.1037½	.1037½	.1037½	.1037½
March	.1037½	.1037½	.1037½	.1037½
April	.1037½	.1037½	.1037½	.1037½
May	.1037½	.1037½	.1037½	.1037½
June	.1037½	.1037½	.1037½	.1037½
July	.1037½	.1037½	.1037½	.1037½
August	.1037½	.1037½	.1037½	.1037½
September	.1037½	.1037½	.1037½	.1037½
October	.1037½	.1037½	.1037½	.1037½
November	.1037½	.1037½	.1037½	.1037½
December	.1037½	.1037½	.1037½	.1037½
Year	.1037½	.1037½	.1037½	.1037½

Zinc Oxide, American Process, Lead-free

(Bags, car lots)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.0650	$0.0650	$0.0650	$0.0650
February	.0650	.0650	.0650	.0650
March	.0650	.0650	.0650	.0650
April	.0650	.0650	.0650	.0650
May	.0650	.0650	.0650	.0650
June	.0650	.0650	.0650	.0650
July	.0650	.0650	.0650	.0650
August	.0650	.0650	.0650	.0650
September	.0650	.0650	.0650	.0650
October	.0650	.0650	.0650	.0650
November	.0650	.0650	.0650	.0650
December	.0650	.0650	.0650	.0650
Year	.0650	.0650	.0650	.0650

Zinc Oxide, American Process, 10-25 p.c. Leaded

(Barrels, car lots)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.0675	$0.0675	$0.0687½	$0.0687½
February	.0675	.0675	.0687½	.0687½
March	.0675	.0675	.0687½	.0687½
April	.0687½	.0675	.0687½	.0687½
May	.0687½	.0687½	.0687½	.0687½
June	.0687½	.0687½	.0687½	.0687½
July	.0687½	.0687½	.0687½	.0687½
August	.0687½	.0687¼	.0687½	.0687½
September	.0687½	.0687½	.0687½	.0687½
October	.0687½	.0687½	.0687½	.0687½
November	.0687½	.0687½	.0687½	.0687½
December	.0687½	.0687½	.0687½	.0687½
Year	.0687½	.0675	.0687½	.0687½

Dry Colors

Carbon Gas Black

August 22, 1892, the price was 4c. to 4½c.; October 18, 1901, 8c. to 20c.; 1911, 6¾c. to 8c.; 1913, 4c. to 8c.; 1918, May, 40c.

(F.o.b. works, bags)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.08	$0.08	$0.06½	$0.06½
February	.08	.08	.06½	.06½
March	.08	.06½	.06½	.06½
April	.06½	.06½	.06½	.06½
May	.06½	.06½	.06½	.06½
June	.06½	.06½	.06½	.06½
July	.06½	.06½	.06½	.06½
August	.06½	.06½	.07½	.07½
September	.06½	.06½	.07½	.07½
October	.06½	.06½	.07½	.07½
November	.06½	.06½	.07½	.07½
December	.06½	.06½	.07½	.07½
Year	.08	.06½	.07½	.06½

Lampblack

October 18, 1871, the price was 6½c. to 10c.; 1881, 5c. to 8c.; 1891, 5c. to 10c.; 1901, 4½c. to 6c.; 1911, 3c. to 15c.; 1913, 3c. to 7c.; 1920, December, 48c.

(Commercial, barrels)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.09	$0.09	$0.09	$0.09
February	.09	.09	.09	.09
March	.09	.09	.09	.09
April	.09	.09	.09	.09
May	.09	.09	.09	.09
June	.09	.09	.09	.09
July	.09	.09	.09	.09
August	.09	.09	.09	.09
September	.09	.09	.09	.09
October	.09	.09	.09	.09
November	.09	.09	.09	.09
December	.09	.09	.09	.09
Year	.09	.09	.09	.09

Iron Oxide, Black

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.04½	$0.04½	$0.04½	$0.04½
February	.04½	.04½	.04½	.04½
March	.04½	.04½	.04½	.04½
April	.04½	.04½	.04½	.04½
May	.04½	.04½	.04½	.04½
June	.04½	.04½	.04½	.04½
July	.04½	.04½	.04½	.04½
August	.04½	.04½	.04½	.04½
September	.04½	.04½	.04½	.04½
October	.04½	.04½	.04½	.04½
November	.04½	.04½	.04½	.04½
December	.04½	.04½	.04½	.04½
Year	.04½	.04½	.04½	.04½

Iron Blues

Bronze, Milori, Chinese and Prussian

October 18, 1871, the price was (Prussian blue), 35c. to 70c.; 1881, 30c. to 60c.; 1891, 25c. to 40c.; 1901, 28c. to 34c.; 1911, 28c. to 30c.; 1913, 30c. to 32c.; 1917, July, $1.50.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.33	$0.33	$0.31	$0.31
February	.33	.33	.31	.31
March	.33	.33	.31	.31
April	.33	.33	.31	.31
May	.33	.33	.31	.31
June	.33	.33	.31	.31
July	.33	.31	.32	.31
August	.31	.31	.32	.31
September	.31	.31	.32	.32
October	.31	.31	.32	.32
November	.31	.31	.32	.32
December	.31	.31	.32	.32
Year	.33	.31	.32	.31

Browns

Sienna, Italian, Burnt

October 18, 1871, the price was 12c. to 14c.; 1881, 5½c.; 1891, 4c. to 5c.; 1901, 3½c. to 7½c.; 1911, 3c. to 9c.; 1913, 4c. to 7c.; 1920, January, 16c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.04	$0.04	$0.05	$0.05
February	.04	.04	.05½	.05
March	.04	.04	.05½	.05½
April	.04	.04	.05½	.05½
May	.04	.04	.05½	.05½
June	.04	.04	.05½	.05½
July	.04	.04	.05½	.05½
August	.04	.04	.05½	.05½
September	.04	.04	.05½	.05½
October	.04	.04	.05½	.05½
November	.04	.04	.05½	.05½
December	.04	.04	.05½	.05½
Year	.04	.04	.05½	.05

Sienna, American, Burnt and Powdered

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.03	$0.03	$0.03	$0.03
February	.03	.03	.03	.03
March	.03	.03	.03	.03
April	.03	.03	.03	.03
May	.03	.03	.03	.03
June	.03	.03	.03	.03
July	.03	.03	.03	.03
August	.03	.03	.03	.03
September	.03	.03	.03	.03
October	.03	.03	.03	.03
November	.03	.03	.03	.03
December	.03	.03	.03	.03
Year	.03	.03	.03	.03

Umber, Turkey, Burnt and Powdered

May 20, 1872, the price was 4½c. to 5c.; August 31, 1881, 3½c. to 4c.; October 18, 1891, 3½c. to 4c.; 1901, 2½c. to 3½c.; 1911, 2¾c. to 3½c.; 1913, 3c. to 3½c.; 1917, October, 7½c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.04	$0.04	$0.04	$0.04
February	.04	.04	.04	.04
March	.04	.04	.04	.04
April	.04	.04	.04	.04
May	.04	.04	.04	.04
June	.04	.04	.04	.04
July	.04	.04	.04	.04
August	.04	.04	.04	.04
September	.04	.04	.04	.04
October	.04	.04	.04	.04
November	.04	.04	.04	.04
December	.04	.04	.04	.04
Year	.04	.04	.04	.04

Umber, American, Burnt and Powdered

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.03	$0.03	$0.03	$0.03
February	.03	.03	.03	.02⅞
March	.03	.03	.02⅞	.02⅞
April	.03	.03	.02⅞	.02⅞
May	.03	.03	.02⅞	.02⅞
June	.03	.03	.02⅞	.02⅞
July	.03	.03	.02⅞	.02⅞
August	.03	.03	.02⅞	.02⅞
September	.03	.03	.02⅞	.02⅞
October	.03	.03	.02⅞	.02⅞
November	.03	.03	.02⅞	.02⅞
December	.03	.03	.02⅞	.02⅞
Year	.03	.03	.03	.02⅞

Vandyke Brown, Imported

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.04	$0.04	$0.04	$0.04
February	.04	.04	.04¼	.04
March	.04	.04	.04¼	.04¼
April	.04	.04	.04¼	.04¼
May	.04	.04	.04¼	.04¼
June	.04	.04	.04¼	.04¼
July	.04	.04	.04¼	.04¼
August	.04	.04	.04¼	.04¼
September	.04	.04	.04¼	.04¼
October	.04	.04	.04¼	.04¼
November	.04	.04	.04¼	.04¼
December	.04	.04	.04¼	.04¼
Year	.04	.04	.04¼	.04

Greens

Chrome Green, Light, C. P.

October 18, 1871, the price was 13c. to 21c.; 1881, 5c. to 14c.; 1891, 8c. to 26c.; 1901, 16c. to 20c.; 1911, 17c. to 25c.; 1913, 7c. to 25c.; 1918, August, 70c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.27	$0.27	$0.27	$0.27
February	.27	.27	.27	.27
March	.27	.27	.27	.27
April	.27	.27	.27	.27
May	.27	.27	.27	.27
June	.27	.27	.27	.27
July	.27	.27	.27	.27
August	.27	.27	.27	.27
September	.27	.27	.27	.27
October	.27	.27	.27	.27
November	.27	.27	.27	.27
December	.27	.27	.27	.27
Year	.27	.27	.27	.27

Commercial Green

October 24, 1877, the price was 10c. to 20c.; October 18, 1881, 5c. to 8c.; 1891, 8c.; 1901, 5c. to 6¼c.; 1911, 3½c. to 5c.; 1913, 3½c. to 5c.; 1919, February, 15c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.07	$0.07	$0.06¼	$0.06¼
February	.07	.07	.06¼	.06¼
March	.07	.07	.06¼	.06¼
April	.07	.07	.06¼	.06¼
May	.07	.07	.06¼	.06¼
June	.07	.07	.06¼	.06¼
July	.07	.06¼	.06¼	.06¼
August	.06¼	.06¼	.06¼	.06¼
September	.06¼	.06¼	.06¼	.06¼
October	.06¼	.06¼	.06¼	.06¼
November	.06¼	.06¼	.06¼	.06¼
December	.06¼	.06¼	.06¼	.06¼
Year	.07	.06¼	.06¼	.06¼

Reds

Carmine No. 40

August 15, 1877, the price was $5.50 to $7; October 18, 1881, 5c. to 8c.; 1891, 8c.; 1901, $2.05 to $2.75; 1911, $2.30 to $2.50; 1913, $2.75 to $3; 1919, January, $6.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$5.00	$5.00	$5.25	$5.25
February	5.50	5.50	5.25	5.25
March	5.50	5.50	5.25	5.25
April	5.50	5.50	5.25	5.25
May	5.50	5.50	5.25	5.25
June	5.50	5.50	5.25	5.25
July	5.50	5.25	5.25	5.25
August	5.25	5.25	5.25	5.25
September	5.25	5.25	6.50	6.00
October	5.25	5.25	6.00	6.00
November	5.25	5.25	6.00	6.00
December	5.25	5.25	6.00	6.00
Year	5.50	5.00	6.50	5.25

Oxide Red, Copperas

May 13, 1907, the price was 2c. to 7½c.; October 18, 1911, 2¾c. to 10c.; 1913, 2¾c. to 10c.; 1918, July, 20c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.04	$0.04	$0.04	$0.04
February	.04	.04	.04	.04
March	.04	.04	.04	.04
April	.04	.04	.04	.04
May	.04	.04	.04	.04
June	.04	.04	.04	.04
July	.04	.04	.04	.04
August	.04	.04	.04	.04
September	.04	.04	.04	.04
October	.04	.04	.04	.04
November	.04	.04	.04	.04
December	.04	.04	.04	.04
Year	.04	.04	.04	.04

Indian Red, American, Pure

September 8, 1880, the price was 1½c. to 1¾c.; October 18, 1881, 1½c. to 1⅝c.; 1891, 3½c. to 6½c.; 1901, 3c. to 3¾c.; 1911, 1½c. to 1⅝c.; 1913, 1½c. to 1⅝c.; 1919, January, 16c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.10	$0.10	$0.10	$0.10
February	.10	.10	.10	.10
March	.10	.10	.10	.10
April	.10	.10	.10	.10
May	.10	.10	.10	.10
June	.10	.10	.10	.10
July	.10	.10	.10	.10
August	.10	.10	.10	.10
September	.10	.10	.10	.10
October	.10	.10	.10	.10
November	.10	.10	.10	.10
December	.10	.10	.10	.10
Year	.10	.10	.10	.10

Tuscan Red

August 15, 1877, the price was 20c. to 25c.; October 18, 1881, 11½c. to 13c.; 1891, 7c. to 10c.; 1901, 7c. to 10c.; 1911, 7c. to 10c.; 1913, 7c. to 10c.; 1921, November, 44c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.15	$0.15	$0.15	$0.15
February	.15	.15	.15	.15
March	.15	.15	.15	.15
April	.15	.15	.15	.15
May	.15	.15	.15	.15
June	.15	.15	.15	.15
July	.15	.15	.15	.15
August	.15	.15	.15	.15
September	.15	.15	.15	.15
October	.15	.15	.15	.15
November	.15	.15	.15	.15
December	.15	.15	.15	.15
Year	.15	.15	.15	.15

Venetian Red

October 18, 1871, the price was 2½c. to 3c.; 1881, 1¼c. to 1⅝c.; 1891, 1¼c. to 1½c.; 1901, 1¾c. to 3c.; 1911, 1¼c. to 1⅝c.; 1913, 1½c. to 1⅝c.; 1920, November, 10c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.01½	$0.01½	$0.01½	$0.01½
February	.01½	.01½	.01½	.01½
March	.01½	.01½	.01½	.01½
April	.01½	.01½	.01½	.01½
May	.01½	.01½	.01½	.01½
June	.01½	.01½	.01½	.01½
July	.01½	.01½	.01½	.01½
August	.01½	.01½	.01½	.01½
September	.01½	.01½	.01½	.01½
October	.01½	.01½	.01½	.01½
November	.01½	.01½	.01½	.01½
December	.01½	.01½	.01½	.01½
Year	.01½	.01½	.01½	.01½

English Vermilion

October 18, 1881, the price was $1 to $1.10; 1881, 54c.; 1891, 91c. to 95c.; 1901, 80c. to 90c.; 1911, 70c.; 1913, 70c.; 1919, January, $2.10.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$1.55	$1.55	$1.90	$1.75
February	1.55	1.55	1.75	1.75
March	1.70	1.55	1.85	1.75
April	1.85	1.75	1.85	1.85
May	1.85	1.80	1.85	1.75
June	1.80	1.70	1.80	1.75
July	1.80	1.80	1.85	1.80
August	1.80	1.80	2.00	1.80
September	1.80	1.70	1.95	1.85
October	1.95	1.70	1.90	1.85
November	1.95	1.90	1.90	1.85
December	1.95	1.90	1.90	1.90
Year	1.95	1.55	2.00	1.75

Yellows

Chrome Yellow, C. P.

October 18, 1871, the price was 22c. to 23c.; 1881, 10c. to 30c.; 1891, 10c. to 27c.; 1901, 10¼c. to 25c.; 1911, 12¼c. to 13c.; 1913, 11c. to 13c.; 1918, March, 35c.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.17	$0.17	$0.16	$0.16
February	.17	.17	.16	.15½
March	.17	.17	.15½	.15½
April	.17	.16½	.15½	.15½
May	.16½	.16½	.15¼	.15¼
June	.16½	.16¼	.15¼	.15¼
July	.16½	.16½	.15½	.15¼
August	.16½	.16½	.15½	.15½
September	.16½	.16¼	.15½	.15½
October	.16¼	.16	.15½	.15½
November	.16	.16	.15¼	.15¼
December	.16	.16	.15½	.15½
Year	.17	.16	.16	.15¼

Yellow Ocher, Domestic, Strong

October 18, 1871, the price was 1¼c. to 1½c.; 1881, 1¼c. to 1½c.; 1891, 1⅝c. to 2¼c.; 1901, 1½c. to 2c.; 1911, 1¼c. to 2c.; 1913, ⅜c. to ⅝c.; 1919, August, 5½c. per pound.

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.01⅝	$0.01⅝	$0.01⅝	$0.01⅝
February	.01⅝	.01⅝	.01⅝	.01⅝
March	.01⅝	.01⅝	.01⅝	.01⅝
April	.01⅝	.01⅝	.01⅝	.01⅝
May	.01⅝	.01⅝	.01⅝	.01⅝
June	.01⅝	.01⅝	.01⅝	.01⅝
July	.01⅝	.01⅝	.01⅝	.01⅝
August	.01⅝	.01⅝	.01⅝	.01⅝
September	.01⅝	.01⅝	.01⅝	.01⅝
October	.01⅝	.01⅝	.01⅝	.01⅝
November	.01⅝	.01⅝	.01⅝	.01⅝
December	.01⅝	.01⅝	.01⅝	.01⅝
Year	.01⅝	.01⅝	.01⅝	.01⅝

French Ocher, Dark

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.02⅞	$0.02⅞	$0.02⅞	$0.02⅞
February	.02⅞	.02⅞	.02⅞	.02⅞
March	.03	.03	.02⅞	.02⅞
April	.03	.03	.02⅞	.02⅞
May	.02⅞	.02⅞	.02⅞	.02⅞
June	.02⅞	.02⅞	.02⅞	.02⅞
July	.02⅞	.02⅞	.02⅞	.02⅞
August	.02⅞	.02⅞	.02⅞	.02⅞
September	.02⅞	.02⅞	.02⅞	.02⅞
October	.02⅞	.02⅞	.02⅞	.02⅞
November	.02⅞	.02⅞	.02⅞	.02⅞
December	.02⅞	.02⅞	.02⅞	.02⅞
Year	.02⅞	.02⅞	.02⅞	.02⅞

Other Paint Materials

Casein

(Imported, bags, car lots)

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$0.16¼	$0.15	$0.18	$0.18
February	.17	.16	.18	.17½
March	.17	.16½	.16½	.16½
April	.19	.18½	.16¾	.16
May	.18½	.18	.16	.15¾
June	.18	.18	.16½	.15¾
July	.18	.17½	.16½	.16½
August	.18	.17½	.16¾	.16¾
September	.18	.18	.17	.16¾
October	.18	.18	.16½	.16
November	.18	.18	.16¾	.15½
December	.18½	.18	.15½	.15½
Year	.19	.15	.18	.15¼

China Clay, Imported

October 18, 1871, the price was 2¼c. to 2½c. per pound; 1881, $14.50 to $21 per ton; 1891, $13 to $18; 1901, $12 to $17; 1911, $11 to $18; 1913, $11 to $18; 1918, August, $50.

	1927. Per ton H.	1927. Per ton L.	1928. Per ton H.	1928. Per ton L.
January	$15.00	$15.00	$15.00	$15.00
February	15.00	15.00	15.00	15.00
March	15.00	15.00	15.00	15.00
April	15.00	15.00	15.00	15.00
May	15.00	15.00	15.00	15.00
June	15.00	15.00	15.00	15.00
July	15.00	15.00	15.00	15.00
August	15.00	15.00	15.00	15.00
September	15.00	15.00	15.00	15.00
October	15.00	15.00	15.00	15.00
November	15.00	15.00	15.00	15.00
December	15.00	15.00	15.00	15.00
Year	15.00	15.00	15.00	15.00

China Clay, Domestic (Powdered)

November 30, 1891, the price was $9 to $12; October 18, 1901, $8.50 to $10; 1911, $8 to $9; 1913, $8 to $9; 1919, March, $25.

(F.o.b. point of production)

	1927. Per ton H.	1927. Per ton L.	1928. Per ton H.	1928. Per ton L.
January	$10.00	$10.00	$10.00	$10.00
February	10.00	10.00	10.00	10.00
March	10.00	10.00	10.00	10.00
April	10.00	10.00	10.00	10.00
May	10.00	10.00	10.00	10.00
June	10.00	10.00	10.00	10.00
July	10.00	10.00	10.00	10.00
August	10.00	10.00	10.00	10.00
September	10.00	10.00	10.00	10.00
October	10.00	10.00	10.00	10.00
November	10.00	10.00	10.00	10.00
December	10.00	10.00	10.00	10.00
Year	10.00	10.00	10.00	10.00

Cobalt, Oxide, Black

	1927. Per pound H.	1927. Per pound L.	1928. Per pound H.	1928. Per pound L.
January	$2.10	$2.10	$2.10	$2.10
February	2.10	2.10	2.10	2.10
March	2.10	2.10	2.10	2.10
April	2.10	2.10	2.10	2.10
May	2.10	2.10	2.10	2.10
June	2.10	2.10	2.10	2.10
July	2.10	2.10	2.10	2.10
August	2.10	2.10	2.10	2.10
September	2.10	2.10	2.10	2.10
October	2.10	2.10	2.10	2.10
November	2.10	2.10	2.10	2.10
December	2.10	2.10	2.10	2.10
Year	2.10	2.10	2.10	2.10

Fuller's Earth, Powdered (Imported)

February 18, 1895, the price was 75c. to 80c. per 100 pounds; October 18, 1901, 75c. to 80c.; 1911, 80c. to 85c.; 1913, 80c. to 85c.; 1918, July, $2.

	1927. Per ton H.	1927. Per ton L.	1928. Per ton H.	1928. Per ton L.
January	$25.00	$25.00	$25.00	$25.00
February	25.00	25.00	25.00	25.00
March	25.00	25.00	25.00	25.00
April	25.00	25.00	25.00	25.00
May	25.00	25.00	25.00	25.00
June	25.00	25.00	25.00	25.00
July	25.00	25.00	25.00	25.00
August	25.00	25.00	25.00	25.00
September	25.00	25.00	25.00	25.00
October	25.00	25.00	25.00	25.00
November	25.00	25.00	25.00	25.00
December	25.00	25.00	25.00	25.00
Year	25.00	25.00	25.00	25.00

Plaster of Paris (Barrels)

August 15, 1877, the price was $1; October 18, 1881, $1.75; 1891, $1.75 to $2; 1901, $1.75; 1911, $1.50 to $1.70; 1913, $1.50 to $1.75; 1920, November, $5.

	1927. Per 100 pounds H.	1927. Per 100 pounds L.	1928. Per 100 pounds H.	1928. Per 100 pounds L.
January	$3.15	$3.15	$3.40	$3.40
February	3.15	3.15	3.40	3.40
March	3.15	3.15	3.40	3.40
April	3.40	3.15	3.40	3.40
May	3.40	3.40	3.40	3.40
June	3.40	3.40	3.40	3.40
July	3.40	3.40	3.40	3.40
August	3.40	3.40	3.40	3.40
September	3.40	3.40	3.40	3.40
October	3.40	3.40	3.40	3.40
November	3.40	3.40	3.40	3.40
December	3.40	3.40	3.40	3.40
Year	3.40	3.15	3.40	3.40

Putty, Commercial

October 18, 1871, the price in 12½-lb. tins was 3¾c. to 4¼c.; 1881, 2½c. to 2¾c.; 1891, 2⅜c. to 2½c.; 1901, 2¼c.; 1911, 1½c. to 2c.; 1913, 1 to 5-lb. tins, $1.50 to $1.90 per 100 pounds; 1918, July, $7.40.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$3.25	$3.25	$3.25	$3.25
February	3.25	3.25	3.25	3.25
March	3.25	3.25	3.25	3.25
April	3.25	3.25	3.25	3.25
May	3.25	3.25	3.25	3.25
June	3.25	3.25	3.25	3.25
July	3.25	3.25	3.25	3.25
August	3.25	3.25	3.25	3.25
September	3.25	3.25	3.25	3.25
October	3.25	3.25	3.25	3.25
November	3.25	3.25	3.25	3.25
December	3.25	3.25	3.25	3.25
Year	3.25	3.25	3.25	3.25

Terra Alba, American, No. 1

October 24, 1888, the price was 65c. to 70c.; October 18, 1891, $1; 1901, 65c. to 85c.; 1911, 75c. to 80c.; 1913, 75c. to 80c.; 1921, January, $2.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.25	$1.25	$1.15	$1.15
February	1.25	1.25	1.15	1.15
March	1.25	1.25	1.15	1.15
April	1.25	1.25	1.15	1.15
May	1.25	1.25	1.15	1.15
June	1.25	1.25	1.15	1.15
July	1.25	1.25	1.15	1.15
August	1.25	1.25	1.15	1.15
September	1.25	1.25	1.15	1.15
October	1.25	1.25	1.15	1.15
November	1.25	1.25	1.15	1.15
December	1.25	1.25	1.15	1.15
Year	1.25	1.25	1.15	1.15

Talc, American

November 30, 1891, the price was $1 to $1.25 per 100 pounds; October 18, 1901, 90c. to $1.10; 1911, $15 to $20 per ton; 1913, $15 to $20; 1918, July, $40.

(Bags, f.o.b. mines)

	Per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$16.00	$16.00	$16.00	$16.00
February	16.00	16.00	16.00	16.00
March	16.00	16.00	16.00	16.00
April	16.00	16.00	16.00	16.00
May	16.00	16.00	16.00	16.00
June	16.00	16.00	16.00	16.00
July	16.00	16.00	16.00	16.00
August	16.00	16.00	16.00	16.00
September	16.00	16.00	16.00	16.00
October	16.00	16.00	16.00	16.00
November	16.00	16.00	16.00	16.00
December	16.00	16.00	16.00	16.00
Year	16.00	16.00	16.00	16.00

Whiting, Commercial

October 18, 1871, the price was 1c. per pound; 1881, 50c. to 55c. per 100 pounds; 1891, 70c. to 75c.; 1901, 40c. to 60c.; 1911, 45c. to 50c.; 1913, 45c. to 50c.; 1920, April, $1.40.

	Per 100 pounds			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.85	$0.85	$0.85	$0.85
February	.85	.85	.85	.85
March	.85	.85	.85	.85
April	.85	.85	.85	.85
May	.85	.85	.85	.85
June	.85	.85	.85	.85
July	.85	.85	.85	.85
August	.85	.85	.85	.85
September	.85	.85	.85	.85
October	.85	.85	.85	.85
November	.85	.85	.85	.85
December	.85	.85	.85	.85
Year	.85	.85	.85	.85

Varnish Gums

Congo, Water White

On February 8, 1909, the price was 30c. to 35c.; October 18, 1911, 30c. to 35c.; 1913, 30c. to 34c.; 1918, July, 45c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.37	$0.37	$0.37	$0.37
February	.37	.37	.37	.37
March	.37	.37	.37	.37
April	.37	.37	.37	.37
May	.37	.37	.37	.37
June	.37	.37	.37	.37
July	.37	.37	.37	.37
August	.37	.37	.37	.37
September	.37	.37	.37	.37
October	.37	.37	.37	.37
November	.37	.37	.37	.37
December	.37	.37	.37	.37
Year	.37	.37	.37	.37

Dammar, Batavia

October 18, 1871, the price was 13c.; 1881, 18c. to 21c.; 1891, 16c. to 18c.; 1901, 12½c. to 13½c.; 1911, 12½c. to 12¾c.; 1913, 20c. to 21c.; 1920, March, 60c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.26	$0.25½	$0.23¾	$0.22½
February	.25½	.25	.23½	.23
March	.25	.25	.22¾	.22¾
April	.24¾	.24½	.22¾	.22¼
May	.25¼	.25	.22	.22
June	.25¼	.24¾	.22	.22
July	.24¾	.24	.22	.22
August	.24	.24	.22	.22
September	.24	.23¾	.22¼	.22¼
October	.23¾	.23½	.24	.22¼
November	.23½	.23	.24½	.24
December	.23	.22¼	.25	.24
Year	.26	.22¼	.25	.22

Kauri, Pale, No. 1

October 18, 1871, the price for ordinary to prime was 11c. to 12c.; 1881, 10c. to 15c.; 1891, 13½c. to 14½c.; 1901, 26c. to 30c.; 1911, 20c. to 24c.; 1913, 50c.; 1920, March, 60c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.55	$0.55	$0.48	$0.48
February	.55	.55	.48	.48
March	.55	.55	.48	.48
April	.55	.55	.48	.48
May	.55	.55	.48	.48
June	.55	.55	.48	.48
July	.55	.55	.48	.48
August	.55	.55	.48	.48
September	.55	.55	.48	.48
October	.55	.55	.48	.48
November	.55	.55	.48	.48
December	.55	.55	.48	.48
Year	.55	.55	.48	.48

Manila, Pale, Nubs

August 22, 1877, the price was 7½c. to 8c.; March 18, 1881, 10c. to 18c.; October 18, 1891, 17c. to 25c.; 1901, 14c. to 16c.; 1911, 15c. to 18c.; 1913, 15c. to 18c.; 1920, May, 30c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.14	$0.14	$0.14	$0.14
February	.14	.14	.14	.14
March	.14	.14	.14	.14
April	.14	.14	.14	.14
May	.14	.14	.14	.14
June	.14	.14	.14	.14
July	.14	.14	.14½	.14
August	.14	.14	.14½	.14½
September	.14	.14	.14¾	.14½
October	.14	.14	.15½	.15¼
November	.14	.14	.15¼	.15¼
December	.14	.14	.15¼	.15¼
Year	.14	.14	.15½	.14

Pontianak, Nubs, No. 1

July 1, 1907, the price was 17c.; October 18, 1911, 12½c. to 13½c.; 1913, 13½c. to 15c.; 1919, December, 45c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.15	$0.15	$0.13½	$0.13½
February	.15	.15	.13½	.13½
March	.14¾	.14¾	.13½	.13½
April	.13¾	.14¾	.13½	.13½
May	.14¾	.14¾	.13½	.13½
June	.14¾	.14¾	.13½	.13½
July	.14¾	.14¾	.13½	.13½
August	.14¾	.14½	.13½	.13½
September	.14½	.14	.14	.14
October	.14	.14	.14	.14
November	.14	.13½	.14	.14
December	.13½	.13½	.14	.14
Year	.15	.13½	.14	.13½

Gilsonite

May 27, 1907, the price was 2½c. to 3½c. per pound; October 18, 1911, $36 to $50 per ton; 1913, $36 to $50; 1919, March, $60.

(Bags, f.o.b. works)

	per ton			
	1927.		1928.	
	H.	L.	H.	L.
January	$51.00	$51.00	$49.50	$49.50
February	51.00	51.00	49.50	49.50
March	51.00	51.00	49.50	33.00
April	51.00	51.00	33.00	33.00
May	51.00	51.00	33.00	33.00
June	51.00	51.00	33.00	33.00
July	51.00	51.00	33.00	33.00
August	51.00	51.00	33.00	33.00
September	51.00	51.00	33.00	33.00
October	51.00	51.00	33.00	33.00
November	51.00	51.00	33.00	33.00
December	51.00	51.00	33.00	33.00
Year	51.00	51.00	49.50	33.00

Lacquer Materials

Butyl Acetate

(In drums)

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.47	$1.47	$1.57	$1.57
February	1.47	1.47	1.57	1.57
March	1.47	1.45	1.47	1.47
April	1.45	1.45	1.47	1.47
May	1.52	1.45	1.45	1.45
June	1.52	1.52	1.38	1.38
July	1.52	1.52	1.38	1.38
August	1.57	1.57	1.42	1.38
September	1.57	1.57	1.36	1.33
October	1.57	1.57	1.35	1.35
November	1.57	1.57	1.35	1.35
December	1.57	1.57	1.40	1.40
Year	1.57	1.45	1.57	1.33

Butyl Alcohol

(In drums)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.19¼	$0.19	$0.19½	$0.19½
February	.19¼	.19	.19½	.1817
March	.19½	.19½	.18¼	.1817
April	.19½	.19½	.18¼	.18¼
May	.19	.18¾	.18¼	.18¼
June	.18¾	.18¾	.18¾	.18¼
July	.19¾	.19¾	.18¼	.18¼
August	.19½	.19½	.18¼	.18¼
September	.19½	.19½	.18¼	.18¼
October	.19½	.19½	.18¼	.18¼
November	.19½	.19½	.18¼	.18¼
December	.19¾	.18¾	.18¼	.18¼
Year	.19¾	.18¾	.19½	.1817

Butyl Propionate

(In drums)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.32	$0.32	$0.31	$0.31
February	.32	.32	.31	.27
March	.32	.31	.27	.27
April	.31	.31	.27	.27
May	.31	.31	.27	.27
June	.31	.31	.27	.27
July	.31	.31	.27	.27
August	.31	.31	.27	.27
September	.31	.31	.27	.27
October	.31	.31	.27	.27
November	.31	.31	.27	.27
December	.31	.31	.25	.25
Year	.32	.31	.31	.25

Cellulose Acetate

(In bags)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$1.40	$1.40	$1.25	$1.25
February	1.40	1.35	1.25	1.25
March	1.35	1.35	1.25	1.25
April	1.35	1.35	1.25	1.20
May	1.35	1.35	1.20	1.20
June	1.35	1.35	1.20	1.20
July	1.25	1.25	1.20	1.20
August	1.25	1.25	1.20	1.20
September	1.25	1.25	1.20	1.20
October	1.25	1.25	1.20	1.20
November	1.25	1.25	1.20	1.20
December	1.25	1.25	1.20	1.20
Year	1.40	1.25	1.25	1.20

Dibutyl Phthalate

(In drums)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.33	$0.32	$0.29½	$0.29½
February	.33	.32	.29½	.29½
March	.33	.30	.29½	.28
April	.30	.30	.28	.28
May	.30	.30	.28	.27½
June	.30	.30	.27½	.27½
July	.30	.30	.27½	.27½
August	.29½	.29½	.27½	.27½
September	.29½	.29½	.27½	.27½
October	.29½	.29½	.27½	.26½
November	.29½	.29½	.26½	.26½
December	.29½	.29½	.26½	.26½
Year	.33	.29½	.29½	.26½

Ethyl Acetate Anhydrous

(In tanks)

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.92	$0.92	$1.05	$1.05
February	.92	.92	1.05	1.05
March	.92	.92	1.05	1.05
April	.92	.92	1.05	1.05
May	1.05	.92	1.05	1.00
June	1.05	1.05	1.02	1.02
July	1.05	1.05	1.02	1.02
August	1.05	1.05	1.07	1.02
September	1.05	1.05	1.07	1.07
October	1.05	1.05	1.07	1.07
November	1.05	1.05	1.20	1.12
December	1.05	1.05	1.20	1.20
Year	1.05	.92	1.20	1.00

Ethyleneglycol Monoethyl Ether

(In tanks)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	....	....	$0.24	$0.21
February	....	....	.21	.21
March	....	....	.21	.21
April	....	....	.19	.19
May	....	....	.19	.19
June	$0.27½	$0.27½	.19	.19
July	.27½	.27½	.19	.19
August	.27½	.27½	.19	.19
September	.27½	.27½	.19	.19
October	.27½	.21	.19	.19
November	.21	.21	.19	.19
December	.21	.21	.19	.19
Year	.27½	.21	.24	.19

Nitrocellulose, Regular

(In drums)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.40	$0.40	$0.40	$0.40
February	.40	.40	.40	.40
March	.40	.40	.40	.40
April	.40	.40	.40	.40
May	.40	.40	.40	.40
June	.40	.40	.40	.40
July	.40	.40	.40	.40
August	.40	.40	.40	.40
September	.40	.40	.40	.40
October	.40	.40	.40	.40
November	.40	.40	.40	.40
December	.40	.40	.40	.40
Year	.40	.40	.40	.40

Tricresyl Phosphate

(In drums)

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.36	$0.36	$0.36	$0.36
February	.36	.36	.36	.36
March	.36	.36	.36	.36
April	.36	.36	.36	.36
May	.36	.36	.36	.36
June	.36	.36	.36	.36
July	.36	.36	.36	.35
August	.36	.36	.35	.35
September	.36	.36	.35	.35
October	.36	.36	.35	.35
November	.36	.36	.35	.35
December	.36	.36	.35	.35
Year	.36	.36	.36	.35

Glues

Cabinet

(Low grade)

October 18, 1871, the quotation for white glue was 35c. to 50c.; 1881, 15c. to 24c.; 1891, 14c. to 25c.; 1901, 18c. to 23c.; 1911, 18c. to 24c.; 1913, 13c. to 15c.; 1917, October, 17c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.16	$0.16	$0.20	$0.19
February	.17	.16	.20	.20
March	.17	.17	.21	.20
April	.18	.17	.21	.21
May	.18	.18	.21	.21
June	.18	.18	.21	.21
July	.18	.18	.21	.21
August	.18	.18	.21	.21
September	.18	.18	.21	.21
October	.18	.18	.21	.21
November	.19	.18	.21	.21
December	.19	.18	.22	.21
Year	.19	.16	.22	.19

Common Bone

October 18, 1871, the price was 18c. to 25c.; 1881, 8c. to 11c.; 1891, 7c. to 9c.; 1901, 6½c. to 8c.; 1911, 7½c. to 9c.; 1913, 7½c. to 9c.; 1917, August, 25c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.13	$0.13	$0.16½	$0.16
February	.14	.13	.16½	.16½
March	.14	.14	.17	.16½
April	.14½	.14	.17	.17
May	.15	.14½	.17	.17
June	.15	.15	.17	.17
July	.15	.15	.17	.17
August	.15	.15	.17	.17
September	.15	.15	.17	.17
October	.16	.15	.17	.17
November	.16	.16	.17	.17
December	.16	.16	.17	.17
Year	.16	.13	.17	.16

Extra White

November 1, 1876, the price was 38c.; October 18, 1881, 27c. to 35c.; 1891, 18c. to 25c.; 1901, 18c. to 23c.; 1911, 18c. to 24c.; 1913, 18c. to 24c.; 1917, November, 45c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.19½	$0.19½	$0.22	$0.22
February	.20	.19½	.22	.22
March	.20	.20	.22	.22
April	.20	.20	.22	.22
May	.20	.20	.22	.22
June	.20	.20	.22	.22
July	.20	.20	.22	.22
August	.20	.20	.22	.22
September	.20	.20	.22	.22
October	.20	.20	.22	.22
November	.22	.22	.22	.22
December	.22	.22	.22	.22
Year	.22	.19½	.22	.22

Blacks Output in 1927

According to data collected at the 1927 biennial census of manufactures, total production of bone black, carbon black, and lampblack was valued at $14,461,584, an increase of 6.2 percent as compared with $13,614,319 for 1925, the last preceding census year. The 1927 total includes $2,049,755, representing the value of bone black and lampblack made as secondary products by establishments engaged primarily in the manufacture of other commodities. The quantities and the values of bone black, carbon black, and lampblack made in 1927 are as follows:—Bone black, 58,159,476 pounds, valued at $2,466,343; carbon black, 198,429,000 pounds, valued at $10,955,000; lampblack, 8,800,366 pounds, valued at $1,040,241.

Of the 67 establishments engaged primarily in the manufacture of bone black, carbon black, and lampblack reporting for 1927, 34 were located in Louisiana, 13 in Texas, 6 in West Virginia, 3 in Kentucky, 2 each in California, Montana, Pennsylvania, and Wyoming, 1 in Massachusetts, 1 in New Jersey, and 1 in Utah. In 1925 the industry was represented by 66 establishments, the increase to 67 in 1927 being the net result of a gain of 15 and a loss of 14. The 15 establishments gained reported for the first time at the present census. Of the 14 establishments lost, 13 went out of business prior to 1927 and one was idle throughout the year.

Detailed figures follow:—

	1927.	1925.
Number of establishments	67	66
Wage earners (average for the year)*	1,553	1,505
Wages	$2,047,044	$1,721,779
Cost of materials, factory supplies, containers for products, fuel, and purchased power, total	$6,571,019	$5,654,965
Materials, supplies, and containers	$6,430,578	†
Fuel and power	$140,441	†
Products, total value	$14,261,775	$14,564,982
Bone black, carbon black, and lampblack	$12,411,829	$10,990,186
All other products	$1,849,946	$3,574,796
Value added by manufacture	$7,690,756	$8,910,017
Horsepower	8,105	7,289

* Not including salaried employees.
† Not reported separately.

Products by Kind—Quantity and Value

	1927.	1925.
Bone black, carbon black, and lampblack made in all industries, aggregate value	$14,461,584	$13,614,319
Made in the bone-black, carbon-black, and lampblack industry, value	$12,411,829	$10,990,186
Made as secondary products in other industries, value	$2,049,755	$2,624,133
Carbon black—		
Pounds	198,429,000	177,417,378
Value	$10,955,000	$9,639,585
Bone black—		
Pounds	58,159,476	64,135,425
Value	$2,466,343	$2,539,704
Lampblack—		
Pounds	8,800,366	12,031,745
Value	$1,040,241	$1,435,030

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You Want
Whenever
You Want It

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Naval Stores: Market Review

The year 1928 in the market for naval stores was an unsatisfactory one from the viewpoint of producers as it proved to be a period of low and unremunerative prices for turpentine and rosin, a decrease in output failing to bring about a recovery to anything like the values prevailing before the heavy production of the previous season sent them downward. The low prices ruling much of the time in the latter year, 1927, resulted in a widespread movement to curtail production during the past year in the hope of restoring prosperous conditions in the industry but the outcome was disappointing, for although rallies in prices occurred from time to time the upturns were generally small and only temporary.

Despite the depressing character of these market developments, however, the feeling in naval stores circles here and in the Sounth at the close of the year was by no means pessimistic. On the contrary there was a disposition to take a cheerful view of the outlook. The indications were that the movement to curtail production would be carried into the new year. Moreover, the markets for turpentine and rosin here and in the South displayed a much improved tone with the approach of the year-end. Receipts of turpentine and rosin diminished during the closing weeks of the year and indications were not lacking that the decrease in the movement would prove permanent, some members of the trade predicting that developments in the statistical position during the final quarter of the naval stores year ending with March, 1929, would be likely to make a decidedly bullish showing in comparison with the corresponding period in the previous season.

One disappointing feature of the market during the past year was the failure of business to broaden as a result of the relatively low prices prevailing for turpentine and rosin. Although the movement into consuming channels in this country was steady during the year and apparently well up to normal, purchasing operations were generally of a conservative character, consumers in many cases being disposed to buy merely for current requirements, their attitude apparently being based on the belief that although production was cut down materially, the output would prove ample.

Foreign demand was also disappointing, a decrease in production in this country apparently being offset to some extent by a larger output in Europe and a decline in prices in the markets abroad. Exports of gum turpentine from the United States to all foreign countries during the period from January 1 to November 30 last year were about 11,650,000 gallons, or 2,800,000 gallons less than in the same time in the previous year, while exports of gum rosin last year were about 935,000 barrels, or 165,000 barrels less than in the previous year. The value of the exports of naval stores of all kinds from the United States during the first eleven months of 1928 was about $24,200,000, or $7,200,000 less than in the corresponding period in the previous year. At the close of last year the outlook for export trade was considered better as stocks of both turpentine and rosin in foreign markets were said to be small.

Changes in gum turpentine prices during the past year were confined within much smaller limits than in recent preceding years. In New York the range between the highest and the lowest prices of the year was only about 10 cents per gallon. This compared with a range of 37½c. per gallon in the previous year and with about 30 cents in the year before that. The lowest price touched last year was 52 cents per gallon and the highest 62½c. per gallon, the former being established in September and the latter in March. In the previous year the lowest price recorded was 50 cents per gallon and the highest 87½c. per gallon, while in the year before that the lowest price was 84½c. per gallon and the highest $1.13½ per gallon. Steam distilled wood turpentine in the New York market last year covered a range of 12 cents per gallon, the lowest price being 47 cents per gallon and the highest 59 cents per gallon. This compared with a range of 36 cents per gallon in the previous year when the lowest price recorded was 46 cents per gallon and the highest 82 cents per gallon.

Rosin prices in the New York market also moved within comparatively small confines during the past year. The range on B rosin was $1.80 per unit, the lowest price being $8 per unit and the highest $9.80 per unit. This compared with a range of $4.25 per unit in the previous year when the lowest price established was $7.90 per unit and the highest $12.15. In 1926, it is of interest to note, the range between the lowest and the highest prices was about $8 per unit, the minimum price established being $7.50 per unit and the highest $15.40 per unit. Quotations on K rosin last year covered a range of $1.30 per unit, the lowest being $9.10 per unit and the highest $10.40 per unit. This compared with a range of $6.90 in the previous year, the lowest price touched that year being $8.20 per unit and the highest $15.10. The range of quotations on W W rosin last year was $1.85 per unit, the lowest price being $10.80 per unit and the highest $12.65. In the previous year the lowest price recorded was $9.40 per unit and the highest $18.75 per unit, showing a range of $9.35 per unit.

Variations in quotations on minor naval stores were confined within comparatively narrow limits, the trend being governed chiefly by the action of the markets for turpentine and rosin. Business was generally of a conservative character, few consumers being inclined to purchase in advance of requirements. The range between the lowest and the highest quotations of the year on pine oil was only 3 cents per gallon. Changes in rosin oil quotations covered a range of from 9 to 16 cents per gallon, according to grade while the range of quotations on pitch was $1 per barrel.

Turpentine

The turpentine situation was featured during the past year by unusually small movements in prices, the range between the highest and the lowest quotations of the year in Southern and local markets being much smaller than in 1927 and 1926, to go no further back. The highest price recorded for gum turpentine in the New York market during the past year was 62½ cents per gallon while the lowest was 52 cents per gallon, the former being established in March and the latter in September.

At the opening of 1928 in the New York market the price of gum turpentine was 57½c. per gallon. The trend during January was generally upward, a price of 62c. per gallon being established during the period. In February a downward drift developed, the price falling to 60½c. per gallon. The trend continued downward during the next three months, the market reaching a basis of 53c. per gallon in May. In the following month there was an upturn to 59c. per gallon. During the next quarter the trend of prices was downward, the market touching 52c. per gallon in September, after which there was a recovery, the market displaying noteworthy firmness in November and December, the range in the closing month of the year being from 60c. to 61½c. per gallon.

Steam distilled wood turpentine in the New York market at the opening of 1928 was quoted at 52c. per gallon. The course of the market during January was upward, a price of 58c. per gallon being reached, after which there was a downturn, the price reacting to 49c. per gallon in May. In June there was an upturn to 54c. per gallon. During the following month the market declined to 52c. per gallon. In August there was a decline to 50c. and in September to 47c. The drift of the market was upward during the last quarter of the year, quotations in December ranging from 58c. to 59c. per gallon.

Notwithstanding the conservative attitude of consumers of turpentine with respect to market operations during the past year, purchasing being limited much of the time to moderate quantities, there was a steady movement into consuming channels and the indications at the close of the calendar year were that consumption for the season was not likely to fall behind the previous season. The quantity of turpentine consumed in the painting of new buildings in parts of the United States during 1928 was greater than in 1927 and according to some the prospects were that consumption in this field during the last quarter of the naval stores year would run ahead of the corresponding period in the previous season.

Receipts of turpentine in Southern markets during the first nine months of the naval stores year were materially smaller than in the same time in the previous season, arrivals at Savannah, Jacksonville and Pensacola, the three chief markets, being about 60,000 barrels under the corresponding period in the previous season.

Rosin

The firmness of the pale grades of rosin in Southern and local markets during the past year was a noteworthy feature of the situation, this being especially true of the W. W. and X. grades during the last quarter of the calendar year. The strength was due to the small proportion of these grades in the receipts at Savannah and Jacksonville and to an increase in the consumption in some industries. At times there was a rather marked shortage of the pale grades, difficulty being experienced by local consumers in securing adequate supplies of these descriptions.

Changes in all grades of rosin in the New York market during the past year covered a much smaller range than in the previous year. The range between the lowest and the highest prices of the year on W. W. was $1.80 per unit. This compared with a range in the previous year of $9.35 per unit. At the opening of 1928 W. W. was $12.20 per unit. It advanced during January to $12.65 per unit. In February the market weakened and took a downward course, the decline continuing, with occasional interruptions, during March, April, May and June, a basis of $10.80 per unit being established in the last named month. In July there was an advance to $11.90 per unit, but the market soon weakened again, touching $11.25 per unit in August and $10.80 in September. During the last quarter of the year the trend was upward, the range of prices in December being $12.35 to $12.45 per unit against $11.75 to $12.40 in the final month of the previous year.

Variations in quotations on dark rosins were also within relatively small limits last year. The range between the lowest and the highest prices of the year on B was $1.80 per unit. This compared with a range in the previous year of $4.25 per unit. At the opening of January last year B rosin was $8.95 per unit. It advanced during January to $9.65 after which there was a downturn, the market dropping to $8 per unit in May. During the next two months the drift was upward, the market touching $9.80 per unit in July. The price then turned downward, a basis of $9 being established in September. The trend was upward during the last quarter of the year, the range in December being from $9.15 to $9.70 per unit against $7.95 to $9.15 in December of the previous year.

Receipts of rosin in the three principal markets in the South during the first nine months of the naval stores year were about 200,000 barrels smaller than in the corresponding period in the previous season, but were about 100,000 barrels larger than in the same time in the year before that. Stocks of rosin in those markets at the close of 1928, notwithstanding the smaller receipts, were about 50,000 barrels larger than at the close of the previous year.

Minor Naval Stores

There were comparatively few price changes in the local market for pine oil during the past year and the variations were also limited in extent, the range between the lowest and the highest quotations of the year being only 3c. per gallon. This compared with a range of 5c. per gallon in the previous year and of 10c. per gallon in the year before that. The lowest price recorded last year, 66c. per gallon, compared with a low in the previous year of 67c., while the highest price touched last year, 69c. per gallon, compared with a high in the previous year of 72c. per gallon.

Pitch prices in the local market last year moved within a range of $1, the lowest quotation being $7 per barrel and the highest $8. This compared with a range of $2 per barrel in the previous year when the lowest price recorded was $7.50 per barrel and the highest $9.50 per barrel.

Rosin oil quotations changed frequently during the past year, the variations being due to the fluctuations in basic material. The range between the lowest and the highest quotations of the year was from 9c. to 16c. per gallon, according to grade. The lowest price recorded for first rectified last year was 53c. per gallon and the highest 62c. per gallon, which compared with 52c. and 70c., respectively, in the previous year. The lowest price recorded for third rectified during the past year was 60c. per gallon, or the same as in the previous year, while the highest price reached last year was 76c. per gallon, which compared with 80c. in the preceding year.

Naval Stores: Record of Prices

Turpentine

Turpentine, Gum Spirits

October 18, 1871, the price was 71c. to 73c.; 1881, 52c. to 53c.; 1891, 37c. to 37½c.; 1901, 38c. to 38½c.; 1911, 51c.; 1913, 45c. to 45½c.; 1920, April, $2.65.

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.87½	$0.87½	$0.62	$0.57½
February	.79½	.71	.61	.60
March	.78	.72½	.62½	.60
April	.70	.66½	.60	.55
May	.64½	.63	.55	.53
June	.62	.54	.59	.53
July	.62	.52½	.57	.55
August	.60	.58½	.54	.53½
September	.57	.55½	.54½	.52
October	.54	.52	.54½	.52½
November	.51½	.50	.61	.55
December	.57½	.51½	.61½	.60
Year	.87½	.50	.62½	.52

Turpentine, Wood, Steam Distilled

May 13, 1907, the price was 63½c.; October 18, 1911, 50c.; 1913, 30c. to 35c.; 1920, June, $2.30.

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.82	$0.77	$0.58	$0.52
February	.76	.67	.57	.57
March	.72	.67	.58	.57
April	.68	.64	.56	.51
May	.62	.61	.51	.49
June	.61	.53	.54	.49
July	.58	.51½	.54	.52
August	.56	.55	.52	.50
September	.54	.52	.49	.47
October	.50	.50	.49	.48
November	.47	.46	.56	.51
December	.52	.47	.59	.58
Year	.82	.46	.59	.47

Turpentine, Wood, Destructive Distilled

May 13, 1907, the price was 63½c.; October 18, 1911, 45c.; 1913, 25c. to 30c.; 1919, November, $1.60.

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.66	$0.64	$0.44	$0.43
February	.64	.60	.46	.46
March	.64	.60	.48	.46
April	.64	.62	.47	.42
May	.56	.56	.42	.40
June	.56	.50	.45	.40
July	.56	.50	.45	.40
August	.48	.48	.40	.40
September	.48	.48	.40	.35
October	.42	.42	.35	.35
November	.42	.40	.35	.35
December	.46	.42	Nominal	
Year	.66	.40	.48	.35

Rosins

Rosin, Grade B

October 18, 1871, the price was $4.10 to $4.17½; 1881, $2.50 to $2.52½; 1891, $1.32½ to $1.35; 1901, $1.42; 1911, $6.90; 1913, $3.95 to $4.25; 1920, May, $20.

	Per unit 1927. H.	1927. L.	1928. H.	1928. L.
January	$12.75	$12.65	$9.65	$8.95
February	12.15	11.50	9.35	8.70
March	10.65	9.60	9.00	8.75
April	10.10	9.50	8.70	8.30
May	9.75	9.65	8.20	8.00
June	10.00	9.60	9.50	8.10
July	10.25	8.95	9.80	9.65
August	10.80	10.50	9.65	9.55
September	10.40	10.00	9.50	9.00
October	9.10	8.70	9.30	9.20
November	8.50	7.90	9.60	9.30
December	9.15	7.95	9.70	9.15
Year	12.15	7.90	9.80	8.00

Rosin, Grade I

February 15, 1881, the price was $2.50; October 18, 1881, $7.50; 1891, $2; 1901, $1.75; 1911, $7.10; 1913, $4.10 to $4.15; 1919, September, $21.25.

	Per unit 1927. H.	1927. L.	1928. H.	1928. L.
January	$13.10	$12.35	$10.35	$9.30
February	13.25	13.15	9.80	9.65
March	13.10	11.85	10.20	9.90
April	11.85	11.15	9.95	9.50
May	10.85	10.60	9.30	9.00
June	10.40	9.75	9.90	8.90
July	10.40	9.00	10.10	9.90
August	11.15	10.60	9.90	9.75
September	10.50	10.15	9.60	9.15
October	9.30	8.75	9.50	9.30
November	8.60	8.10	9.80	9.50
December	9.40	8.15	9.95	9.40
Year	13.25	8.10	10.35	8.90

Rosin, Grade K

February 15, 1881, the price was $2.75; October 18, 1891, $2.20; 1901, $2.30; 1911, $7.15; 1913, $4.70 to $4.80; 1919, July, $22.75.

	Per unit 1927. H.	1927. L.	1928. H.	1928. L.
January	$15.10	$12.45	$10.40	$9.50
February	14.65	14.25	9.90	9.65
March	13.85	11.95	10.25	9.95
April	11.85	11.15	10.10	9.60
May	10.90	10.65	9.40	9.10
June	10.25	9.80	9.95	9.00
July	10.40	9.00	10.15	9.90
August	11.20	10.60	9.90	9.80
September	10.55	10.20	9.65	9.20
October	9.35	8.80	9.60	9.40
November	8.75	8.20	9.85	9.55
December	9.60	8.20	9.95	9.70
Year	15.10	8.20	10.40	9.00

Rosin, Grade WW

January 21, 1885, the price was $5; October 18, 1891, $4; 1901, $4.10; 1911, $8; 1913, $6.95 to $7.10; 1919, September, $25.50.

	Per unit 1927. H.	1927. L.	1928. H.	1928. L.
January	$18.75	$18.30	$12.65	$12.20
February	18.65	18.50	12.40	11.60
March	18.30	16.50	11.75	11.55
April	16.50	16.00	11.55	11.10
May	15.25	12.90	11.70	10.85
June	12.80	10.85	11.70	10.80
July	10.60	9.40	11.90	11.50
August	13.25	12.00	11.50	11.25
September	13.40	12.60	10.95	10.80
October	12.35	11.85	11.45	10.80
November	12.00	11.75	12.25	11.65
December	12.40	11.75	12.45	12.35
Year	18.75	9.40	12.65	10.80

Other Naval Stores

Pine Oil, Steam Distilled

June 13, 1912, the price was 35c. to 45c.; October 18, 1913, 35c. to 45c.; 1920, July, $2.10.

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.70	$0.70	$0.68	$0.68
February	.70	.70	.68	.68
March	.70	.70	.68	.68
April	.70	.70	.68	.68
May	.72	.72	.68	.67
June	.72	.68	.69	.67
July	.68	.68	.69	.68
August	.68	.68	.68	.68
September	.68	.68	.66	.66
October	.67	.67	.66	.66
November	.67	.68	.66	.66
December	.68	.67	.66	.66
Year	.72	.67	.69	.66

Rosin Oil, First Rectified

October 18, 1871, the price was 28c.; 1881, 14½c.; 1891, 10c. to 10½c.; 1901, 15c.; 1911, 36c.; 1913, 27c.; 1920, January, 97c.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.70	$0.70	$0.55	$0.53
February	.70	.70	.55	.53
March	.70	.70	.55	.55
April	.70	.65	.55	.53
May	.65	.55	.53	.53
June	.55	.55	.55	.53
July	.58	.55	.55	.55
August	.58	.58	.60	.55
September	.58	.58	.60	.57
October	.55	.55	.57	.57
November	.55	.52	.62	.62
December	.55	.52	.62	.62
Year	.70	.52	.62	.53

Rosin Oil, Third Rectified

October 18, 1871, the price was 35c.; 1881, 20½c.; 1891, 14c. to 14½c.; 1901, 19c.; 1911, 46c.; 1913, 48c.; 1920, March, $1.15.

	Per gallon			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.80	$0.80	$0.65	$0.65
February	.78	.78	.65	.65
March	.78	.78	.68	.65
April	.78	.75	.68	.60
May	.75	.62	.60	.60
June	.62	.62	.62	.60
July	.67	.62	.62	.62
August	.67	.65	.76	.62
September	.60	.60	.76	.68
October	.60	.60	.68	.68
November	.62	.62	.69	.69
December	.65	.62	.69	.69
Year	.80	.60	.76	.60

Pitch

October 18, 1871, the price was $4 to $4.25; 1881, $2.25 to $2.30; 1891, nominal; 1901, $1.60 to $1.75; 1911, $4 to $4.50; 1913, $4.25 to $4.50; 1920, June, $13.

	Per barrel			
	1927.		1928.	
	H.	L.	H.	L.
January	$9.00	$9.00	$7.50	$7.50
February	9.00	9.00	7.50	7.50
March	9.00	9.00	7.50	7.50
April	9.50	9.00	7.50	7.00
May	9.50	8.50	7.00	7.00
June	8.50	7.50	7.00	7.00
July	7.50	7.50	7.00	7.00
August	7.50	7.50	7.00	7.00
September	7.50	7.50	8.00	7.00
October	7.50	7.50	8.00	8.00
November	7.50	7.50	8.00	8.00
December	7.50	7.50	8.00	7.50
Year	9.50	7.50	8.00	7.00

Tar, Kiln Burned

October 18, 1871, the price was $3.25 to $3.37½; 1881, $3.25; 1891, $1.80; 1901, $1.90; 1911, $7.75; 1913, $7; 1920, February, $15.50.

	Per barrel			
	1927.		1928.	
	H.	L.	H.	L.
January	$15.50	$15.50	$12.50	$12.50
February	15.50	15.50	12.50	12.50
March	15.50	15.50	12.50	12.50
April	15.50	15.50	12.50	12.50
May	16.00	12.50	12.50	12.50
June	12.50	12.50	12.50	12.50
July	12.50	12.50	12.50	12.50
August	12.50	12.50	12.50	12.50
September	12.50	12.50	12.50	12.50
October	12.50	12.50	12.50	12.50
November	12.50	12.50	12.50	12.50
December	12.50	12.50	12.50	12.50
Year	16.00	12.50	12.50	12.50

Botanical Drugs

(Continued from page 75)

Spices

Clove, Zanzibar

May 28, 1875, the price for ground was 41c. to 50c.; October 18, 1881, 29c. to 30c.; 1891, 8c. to 8¼c.; 1901, 8c. to 8¼c.; 1911, 16½c. to 17c.; 1913, 16½c. to 16¾c.; 1919, December, 55c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.23	$0.21	$0.19	$0.18
February	.20½	.20	.19	.18¼
March	.20	.20	.19	.18
April	.19¾	.19½	.19	.19
May	.22	.19½	.23½	.19½
June	.22	.21	.25½	.23
July	.21	.20	.28	.28
August	.20	.19½	.28	.26½
September	.19¼	.19	.26¾	.26¼
October	.19½	.18½	.32	.30½
November	.18¼	.18	.36½	.32
December	.18	.17¼	.36½	.36
Year	.23	.17¼	.36½	.18

There is not a commercial center of any importance in any part of the world where the Oil, Paint and Drug Reporter does not circulate.

Twenty-eight Years' Prices

	Per pound	
	H.	L.
1928	$0.36½	$0.18
1927	.23	.17¾
1926	.26¾	.22½
1925	.30	.24
1924	.34	.26½
1923	.36	.23
1922	.37	.27
1921	.37½	.16
1920	.50	.24
1919	.55	.19
1918	.49	.43
1917	.55	.19½
1916	.20	.16½
1915	.21	.15¼
1914	.22	.14½
1913	.21½	.15
1912	.20½	.10⅝
1911	.19	.12
1910	.15½	.10
1909	.11½	.09½
1908	.12	.10
1907	.18½	.11
1906	.15	.13
1905	.14½	.08½
1904	.19	.13
1903	.10½	.07½
1902	.09	.08
1901	.09½	.07⅞

Nutmegs, 110s

January 12, 1881, the price of prime to ordinary was 27½c. to 30c.; Ocotber 18, 1881, 65c. to 84c.; 1891, 105s to 110s, 60c. to 61c.; 1901, 22½c. to 23c.; 1911, 14¾c. to 15c.; 1913, 14c. to 14¼c.; 1918, August, 39c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.38	$0.38	$0.32½	$0.30
February	.38	.38	.37	.35
March	.38	.37	.37	.37
April	.37	.37	.37	.37
May	.37	.36	.37	.36
June	.36	.36	.36	.35
July	.36	.36	.35	.34
August	.36	.36	.34	.34
September	.36	.34	.34	.34
October	.34	.33½	.34	.33
November	.33½	.33½	.33	.31½
December	.33½	.33½	.31½	.31½
Year	.38	.33½	.37	.30

Pepper, Singapore, Black

April 28, 1875, the price of ground was 18c. to 25c.; October 18, 1881, whole, 16½c. to 17c.; 1891, 8½c. to 8¾c.; 1901, 12½c. to 12¾c.; 1911, 11¾c. to 11½c.; 1913, 11¾c. to 12c.; 1918, May, 28½c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.26½	$0.26	$0.37	$0.36½
February	.26	.25	.38½	.37
March	.26	.25	.40½	.39
April	.26	.26	.41	.40
May	.27½	.24½	.41½	.41
June	.31½	.31	.41	.38
July	.35½	.34½	.38	.34½
August	.36½	.34	.32½	.31½
September	.36½	.36½	.36	.34
October	.36½	.36	.38	.38
November	.38	.37	.37	.37
December	.37¾	.37	.37	.37
Year	.38	.24½	.41½	.31½

Pepper, Lampong

April 28, 1875, the price on ground was 18c. to 25c.; October 18, 1881, whole, 16½c. to 17c.; 1891, 8½c. to 8¾c.; 1901, 12⅝c. to 12¾c.; 1911, 11c to 11¼c.; 1913, 10⅝c. to 11c.; 1918, May, 28½c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.26½	$0.25¾	$0.36½	$0.36½
February	.25	.25	.38½	.37¼
March	.25	.24¾	.40½	.39
April	.24¾	.24½	.41	.40
May	.27½	.24	.41½	.41
June	.31	.30	.41	.37
July	.35½	.34½	.37	.34½
August	.36½	.34	.32½	.31
September	.36½	.36½	.36	.34
October	.36½	.36	.38	.37
November	.38	.37	.36	.35½
December	.37¾	.36½	.36	.35½
Year	.38	.24	.41½	.31

Pepper, Singapore, White

April 28, 1875, the price on powder was 30c. to 36c.; October 18, 1881, whole, 22½c. to 25½c.; 1891, 14¾c. to 15c.; 1901, 19½c. to 19⅝c.; 1911, 16¾c. to 17c.; 1913, 20c. to 20½c., 1919, August, 34¾c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.45	$0.43	$0.49½	$0.48½
February	.42½	.42	.55	.52
March	.42	.41	.59	.55
April	.41	.40	.60	.58
May	.43½	.49½	.62	.60
June	.48	.47	.62	.59
July	.55	.52	.58½	.57
August	.54	.53	.55	.55
September	.54½	.53½	.57	.55
October	.53	.54	.56	.55
November	.53½	.52½	.54	.50
December	.52	.51	.50	.48
Year	.55	.39½	.62	.48

Pepper, Chillies, Japan, No. 1

April 28, 1875, the price of ground African was 30c. to 32c.; October 18, 1881, whole, Bombay, 15c. to 14c.; 1891, Bombay, 8½c. to 9c.; 1901, Japan, 10¾c. to 11c.; 1911, 12c. to 12¼c.; 1913, 8¼c. to 8¾c.; 1921, October, 42c.

	Per pound			
	1927.		1928.	
	H.	L.	H.	L.
January	$0.22½	$0.22	$0.27½	$0.25
February	.24	.22½	.24	.24
March	.24½	.24	.23¾	.22
April	.24½	.24½	.24	.23¼
May	.24½	.23¾	.24	.24
June	.28	.25½	.24	.24
July	.28	.28	.24	.24
August	.28	.27½	.24	.24
September	.27½	.27½	.24	.24
October	.27½	.27½	.24	.23
November	.27½	.27½	.23	.23
December	.27½	.27½	.22	.21
Year	.28	.22	.27½	.21

Oils, Fats, and Greases: Market Review

Business in miscellaneous oils, fats and greases during 1928 was on a conservative scale throughout the period. This does not mean that the consumption of vegetable, animal and fish products during the past year was smaller than in the previous year. On the contrary, the movement into consuming channels in the case of some vegetable and animal oils and fats during 1928 showed some increase as compared with 1927. Consumers in many industries, however, were disposed to adhere to the policy of entering the market for supplies as they were needed and at no time during the year was there any unusual activity. As a result of this course the general market had a rather quiet appearance much of the time and although there were frequent changes in most products, the fluctuations as a rule were confined within comparatively small limits. Even in the case of chinawood oil there was a lack of the wide price movements which featured the market in recent preceding years, the absence of sharp changes being traceable largely to the fact that speculative operations last year in foreign and domestic markets were on a much smaller scale than in former years. The range between the highest and the lowest quotations recorded in the New York market during 1928, it is of interest to note, was less than 3 cents per pound, while in the previous year the range was more than 17 cents per pound. Price movements in many other oils, fats and greases were also noticeably narrow.

The trend of market values as a whole was downward during the first half of the year and upward during the second half, quotations on many products at the close of the year being not far from where they stood at the end of the previous year. At the opening of last year the Oil, Paint and Drug Reporter's price index number for twenty-three representative oils, fats and greases was 147.9 and at the close of the year it was 146.1.

During the first half of January the trend of prices was toward a somewhat higher level, the index number at the middle of the month being 148.4 or 5 points higher than at the opening of the year. This was the highest index number recorded during the year. It compared with a high of 150.6 in the previous year and with a high of 158.9 in the year before that. The lowest index number recorded during the past year was 135.0 which was established in April. In the previous year the lowest index number was 140.2, this being reached in August.

The index number last year, after advancing to 148.4 in January, turned downward during the second half of that month. It continued to decline during February and March, 135.3 being recorded during the latter month. In April and May the trend was upward, 137.0 being established as the index number at the middle of May. The course of the index number was downward during the remainder of May and also during the next two and one-half months, 135.0 being recorded in August. The turning point came in the last named month, the index number rising to 142.4 in September, and to 146.2 in October. During the remainder of the year variations in the index number were slight.

Although there was none of the excitement in chinawood oil that featured the market during the previous year, developments of interest were not entirely lacking last year. Political and labor troubles occurred from time to time in China and these were not without effect in the markets of this country. The coconut oil situation was featured by noteworthy firmness at times in primary and domestic markets, especially during the latter part of the year when there was an upturn in prices on a rather marked shortage of supplies and also because of a rise in copra following a destructive typhoon in the Philippine Islands.

Crude corn oil displayed firmness much of the time during the past year, although it did not sell as high as in the previous year. The lowest price recorded for that product during the past year, however, was nearly 2 cents per pound above the lowest price touched during the previous year. Linseed oil price changes last year were narrower than in recent preceding years and at no time last year was there any great activity in business in this market, although there was steady purchasing and the movement into consuming channels last year was apparently fully as large as in the previous year. Price movements in local and Southern markets for cottonseed products were also comparatively narrow last year.

Tallow covered a range of about one cent per pound in the local market last year, prices showing noteworthy strength during the last quarter of the year when offerings from producers were generally light. Grease also showed a good deal of firmness, prices late in the year rising above the highest quotations of the previous year. Menhaden oil was a firm feature of the market for fish products last year, unfavorable weather for fishing causing a falling off in production of crude as compared with recent preceding years.

Comparative Values

Oil, Paint and Drug Reporter's index numbers, based on 100 as the average price of twenty-three representative oils and fats in August, 1914, ranged as follows by quarters over 1928:—

Jan. 1.	April 1.	July 1.	Oct. 1.	Dec. 31.
147.9	136.3	135.4	143.5	146.1

Vegetable Oils

The past year in domestic markets for chinawood oil was a rather tame one in comparison with previous years. Developments in China last year were of a less stirring character although there were political and labor troubles at times. Transportation in that country, however, was not hampered to the extent that it was in the previous year by political disturbances and there was less uncertainty concerning future supplies. Also speculative operations in domestic markets for one reason or another were on a much smaller scale last year than in previous years, while purchasing by consumers was limited much of the time to actual requirements, there being little disposition to buy ahead. The range of quotations in domestic markets last year was unusually narrow, the difference between the lowest and the highest prices of the period being only 2¾c. per pound, the maximum quotation being 17c. and the minimum 14¼c. This compared with a low in the previous year of 14¾c. per pound and a high of 32c.

Coconut oil price movements were also within comparatively small limits, the tone of the markets here and on the Pacific Coast being firm much of the time. In the local market there were periods of scarcity, particularly during the last quarter of the year when it was difficult to secure oil for immediate delivery. On the Pacific Coast the range between the highest and the lowest quotations of the year on Manila oil in tank cars was ½c. per pound, as compared with a range of ¾c. in the previous year and of 2¾c. in the year before that. Last year the highest price recorded in the market on the Pacific Coast was 9¾c. per pound, and the lowest 9¼c. per pound. Copra prices on the Pacific Coast covered a range of ⅝c. per pound last year as compared with a range of ⅜c. in the previous year.

Olive oil foots displayed considerable firmness during the past year, the lowest price recorded in this market being 1c. per pound above the lowest price of the previous year while the highest price touched last year was ¼c. per pound above the high of the previous year. The firmness was due to a decrease in supplies, some quarters being bare of stocks at times. The highest price recorded last year was 10¾c. per pound and the lowest 9½c. per pound. Denatured olive oil sold at comparatively low prices last year, the highest figure recorded during the period being $1.40 per gallon and the lowest $1.20 per gallon. These quotations compared with $1.80 and $1.35 respectively in the previous year.

Palm oil prices covered a comparatively wide range last year, the difference between the highest and the lowest quotations of the year being 1⅝c. per pound on the Lagos grade as compared with a range of 1¼c. per pound in the previous year. The market displayed noteworthy strength during the last quarter when the highest prices of the past year prevailed, the firmness being due to scarcity and the high prices ruling for competing product. The highest price recorded last year was ½c. per pound over the high of the previous year while the lowest figure last year was ⅛c. per pound above the low of the previous year.

Refined rapeseed oil sold at high prices during the past year, the strength of the market being due to a decrease in production of seed and oil in foreign countries. In this market the highest price touched during the year was 91c. per gallon and the lowest 79c. per gallon which compared with 85c. and 75c. per gallon respectively in the previous year.

Cottonseed Oil

Developments in local and Southern markets for cottonseed and its products last year were of a less interesting character than in the preceding year. Trading in refined oil futures here was on a smaller scale than in the preceding year while business in the South was generally of a conservative nature. The total transactions in refined oil futures on the New York Produce Exchange were 4,603,900 barrels, or 633,200 barrels less than in 1927. The prospects for a considerable increase in the production of cotton and cottonseed last year as compared with the previous season had a tendency to curtail speculative operations. The December crop report issued by the government put the indicated output of cotton for the year at 14,372,000 bales as compared with 12,955,000 bales in the previous season.

Commission house participation in the speculation last year was considerably lighter as a rule than in the previous year, outside public interest in the market in the latter year having been stimulated by indications of a material falling off in production. Last year, with acreage larger and the indications pointing to an increased production of cottonseed oil, outside speculators were inclined to hold aloof from the market, especially as there was a lack of stimulating developments in the markets for products which compete with cottonseed oil. In such circumstances fluctuations in prices were confined within smaller limits than in recent preceding years and the market here was a comparatively uninteresting affair much of the time.

Business in cash refined cottonseed oil in the local market was of conservative character, consumers being averse to purchasing in advance of actual requirements, especially as there was no prospect of a shortage of supplies in view of the indicated increase in production of cotton and cottonseed. Movements in prices were generally narrow in the absence of extreme fluctuations in the market here for futures or in Southern markets for crude oil. The range between the lowest and the highest prices of the year for cash refined oil was 220 points, as compared with a range of 315 points in the previous year. The highest price recorded last year was 10.70c. per pound and the lowest 8.50c. These figures compared with 11.50c. and 8.35c. respectively in the previous year. The highest price last year was established in May when the trend of the market for futures was upward owing to unfavorable weather and crop news from the cotton belt. In the previous year the highest price was reached in September.

Changes in crude cottonseed oil in Southern markets were generally narrow last year, the range between the highest and the lowest quotations of the year in the Southeast being 1⅛c. per pound, as compared with a range in the previous year of 3¼c. per pound. The highest price recorded in the Southeast last year was 9c. per pound in tankcars and the lowest price 7.87½c. per pound. These prices compared with 10c. and 6.75c. per pound respectively in the previous year. Stocks of crude oil in Southern mills at the close of December, according to official statistics, were 133,836,969 pounds, against 158,834,182 pounds at the close of the previous year, while supplies of refined oil were 431,693,697 pounds, against 503,139,659 pounds. The visible supply in the form of seed and crude and refined oil at the close of the past year was equal to 2,334,424 barrels of refined oil, against 2,363,311 barrels at the same time in the previous year.

Flaxseed and Linseed Oil

Fluctuations in flaxseed in domestic and foreign markets during the past year were wide, yet despite this fact changes in linseed oil here were unusually narrow, the range between the highest and the lowest prices of the year being less than one cent per pound. At Minneapolis the range between the highest and the lowest prices of the year for cash flaxseed was 45c. per bushel, as compared with a range in the previous year of 33½c. per bushel. At the opening of last year cash flaxseed at Minneapolis was $2.14 per bushel. The general course of the market during the first five months of the year was upward, the price rising to $2.45½ per bushel in May. During June, July, August and September, the trend of prices was downward, the market touching $2.02¼ per bushel in the last named month. In the last quarter of the year the price trend was upward, the highest quotation of the year being established in this period. The maximum price recorded last year was $2.47 per bushel and the minimum $2.02½ per bushel. These figures compare with $2.38¾ and $2.05¼ respectively.

According to official statistics production of flaxseed in the United States in 1928 was 19,321,000 bushels, against 25,847,000 bushels in 1927. Production in 14 countries so far reported for 1928 was 53,198,000 bushels, or 7,555,000 bushels less than in the previous year. The official estimate of the crop in Argentina was delayed owing to a change in government. The acreage sown for the 1928 season in that country was a record one and as conditions during the growing season were generally favorable it was considered quite possible that a sufficient increase in production might be reported for that country to bring the world's production well above that of 1927.

Revised Russian flaxseed figures for 1928 show a small increase in production as compared with 1927 instead of an expected decrease. The estimate of acreage sown to flaxseed in India at the end of December was 2,568,000 acres, compared with 2,574,000 acres at the corresponding time last year, and a final estimate for the 1927 area of 3,352,000 acres. Commercial stocks of flaxseed in the United States and Canada at the close of December were only 2,854,000 bushels, against 7,034,000 bushels at the same time in the previous year, and 5,644,000 in the year before that.

The highest price recorded for linseed oil in the New York market during 1928 was 10.4c. per pound for car lots in cooperage and the lowest 9.5c. per pound. These prices compared with 11.5c. per pound and 9.4c. per pound respectively in the previous year and with 12.3c. and 10.2c. in the year before that.

Animal Fats and Oils

Tallow prices in the New York market moved within comparatively small limits during the past year, the range between the highest and the lowest quotations of the period on special being 1⅛c. per pound. In the previous year the range was 1⅞c. per pound. The market displayed the most strength last year during the final quarter, the highest price of the year being established in that period. In the closing months of the year there was a shortage of supplies.

Changes in cash lard during 1928 were rather wide, the range between the highest and the lowest quotations on city grade being $2 per 100 pounds which compared with a range of $1.50 per 100 pounds in the previous year. The highest price last year was reached in September and the lowest in February.

Quotations on oleo stearin covered a range of 3½c. per pound during the past year, the highest price recorded being 12½c. per pound, and the lowest 9⅜c. per pound. In the previous year the range was 4¼c. per pound, the highest price being 13¼c. per pound and the lowest 9c. per pound.

Changes in lard oil during the past year were narrower than in recent preceding years. The range between the highest and the lowest quotations on extra No. 1 last year was $1.75 per 100 pounds, the highest being $12.35 and the lowest $11.50 per 100 pounds. This compared with a range of $2.75 per 100 pounds in the previous year when the highest price reached was $13.25 and the lowest $10.50 per 100 pounds.

Fish Oils

Production of crude menhaden oil fell off last year owing to frequent storms along the Atlantic coast during the fishing season. The trend of prices was upward much of the time, the range between the lowest and the highest quotations of the year in the Baltimore market being 10c. per gallon which compared with 7½c. in the previous year. At the close of last year supplies had been cleaned up and quotations were nominal.

The trend of Newfoundland cod oil prices was upward at times during the past year although there was some irregularity. At the opening of the year 63c. per gallon was quoted on spot in this market for oil in cooperage, but the market rose to 68c. per gallon in April and that figure was maintained until October when there was a moderate recession. The range between the highest and the lowst prices of the year on spot oil in the New York market was 5c. per gallon while in the previous year the market remained practically stationary. Whale oil, crude and refined, was steady throughout the past year.

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Animal, Fish, Vegetable Oils: Record of Prices

Vegetable Oils

Chinawood Oil

February 4, 1905, the price was 6c. to 6¼c.; October 18, 1911, 8¾c. to 9c.; 1913, 7¼c. to 7½c.; 1918, July, 32c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.16	$0.13¼	$0.17	$0.15½
February	.18½	.17½	.17	.15⅞
March	.28	.24	.14⅜	.14
April	.32	.30	.15⅜	.14⅜
May	.28	.19	.15	.14½
June	.20	.19	.15	.14⅜
July	.20	.17	.15½	.14⅜
August	.18½	.16⅜	.15½	.14⅜
September	.17⅜	.16¼	.15¼	.14½
October	.16	.14⅞	.15½	.15¼
November	.15½	.15¼	.15	.14¼
December	.15½	.14⅜	.14⅜	.14½
Year	.32	.14⅜	.17	.14¼

Coconut Oil, Manila

October 23, 1918, the price was 15¾c. to 16c.; 1919, July, 20¼c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.09¼	$0.09⅝	$0.09⅜
February	.09⅝	.09½	.09⅜	.09⅜
March	.09½	.09¼	.09⅜	.09⅜
April	.09⅜	.09⅜	.09⅜	.09⅜
May	.09⅞	.09½	.09⅜	.09⅜
June	.09⅞	.09⅝	.09⅜	.09⅜
July	.09⅝	.09⅝	.09⅜	.09⅜
August	.09⅝	.09⅝	.09½	.09⅜
September	.10	.09⅝	.09⅝	.09⅜
October	.09⅞	.09⅝	.09⅝	.09⅜
November	.09⅞	.09⅝	.09⅜	.09⅜
December	.09⅝	.09⅜	.09⅝	.09½
Year	.10	.09¼	.09⅝	.09⅜

Coconut Oil, Manila
(F.o.b. Pacific Coast)

(In tankcars)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08¼	$0.07⅞	$0.08⅝	$0.08⅜
February	.08⅝	.08¼	.08¼	.08
March	.08¼	.07⅞	.08⅜	.08⅛
April	.08⅛	.08	.08⅜	.08⅛
May	.08¼	.08⅛	.08⅜	.08⅛
June	.08¼	.08	.08⅛	.08
July	.08¼	.08⅛	.08⅛	.07¾
August	.08⅛	.08⅛	.07¾	.07⅝
September	.08⅜	.08¼	.07⅞	.07⅝
October	.08⅜	.08⅜	.07⅞	.07¾
November	.08¼	.08⅝	.08	.07⅞
December	.08⅜	.08⅜	.07⅞	.07¾
Year	.08⅝	.07⅞	.08⅜	.07⅝

Coconut Oil, Ceylon, Domestic

August 14, 1916, the price was 12¾c. to 13c.; 1919, July, 20¾c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.09¼	$0.09⅝	$0.09⅜
February	.09⅝	.09½	.09⅜	.09⅜
March	.09½	.09¼	.09⅜	.09⅜
April	.09⅜	.09⅜	.09⅜	.09⅜
May	.09⅞	.09½	.09⅜	.09⅜
June	.09⅞	.09⅝	.09⅜	.09⅜
July	.09⅝	.09⅝	.09⅜	.09⅜
August	.09⅝	.09⅝	.09½	.09⅜
September	.10	.09⅝	.09⅝	.09⅜
October	.09⅞	.09⅝	.09⅝	.09⅜
November	.09⅞	.09⅝	.09⅜	.09⅜
December	.09⅝	.09⅜	.09⅝	.09½
Year	.10	.09¼	.09⅝	.09⅜

Copra
(F.o.b. New York)

April 20, 1912, the price was 9½c. to 9¼c.; 1913, 10¾c. to 10⅞c.; 1919, January, 20¾c.

(In bags)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.05⅞	$0.05	$0.05½	$0.05⅜
February	.05⅝	.05¼	.05½	.05⅜
March	.05⅝	.05⅛	.05⅝	.05⅜
April	.05¼	.05⅛	.05⅜	.05⅜
May	.05¼	.05⅛	.05⅜	.05⅜
June	.05¼	.05⅛	.05⅜	.05⅛
July	.05¼	.05¼	.05¼	.05⅛
August	.05⅛	.05¼	Nominal	
September	.05⅛	.05⅛	Nominal	
October	.05⅛	.05⅛	Nominal	
November	.05¼	.05⅛	Nominal	
December	.05⅜	.05¼	Nominal	
Year	.05⅝	.05	.05½	.05⅛

Copra
(F.o.b. Pacific Coast)

On January 5, 1918, the price was 8⅞c to 9c.; 1920, January, 11¼c.

(In bags)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04⅛	$0.04⅞	$0.05⅜	$0.05¼
February	.05¼	.05⅛	.05⅜	.05⅛
March	.05	.05	.05¼	.05⅛
April	.05	.05	.05¼	.05¼
May	.05⅛	.05	.05¼	.05¼
June	.05⅛	.05	.05⅛	.05⅛
July	.05¼	.05	.05	.05
August	.05⅛	.05⅛	.05	.04⅞
September	.05⅛	.05⅛	.04¾	.04¾
October	.05⅛	.05¼	.04⅞	.04¾
November	.05⅛	.05⅛	.05	.04⅞
December	.05¼	.05¼	.05	.05
Year	.05¼	.04⅞	.05⅜	.04¾

Corn Oil, Crude

March 8, 1915, the price was $7.75 to $7.85; 1920, January, $20.81.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.10	$0.10	$0.12	$0.12
February	.10	.09¾	.12	.12
March	.09¾	.09¾	.10	.10
April	.09¾	.09¾	.10	.10
May	.10	.09¾	.10	.10
June	.11	.11	.10	.10
July	.11	.11	.10	.10
August	.11½	.11	.10	.10
September	.11¾	.11½	.10½	.10
October	.11¾	.11¾	.10½	.10½
November	.12	.12	.10½	.10½
December	.12	.12	.10½	.10⅝
Year	.12	.09¾	.12	.10

Corn Oil, Crude

(F.o.b. mill)
(In tank cars)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07	$0.06¼	$0.09¾	$0.09¼
February	.08½	.07⅝	.09¾	.08¼
March	.08½	.08	.08¾	.08¼
April	.07⅞	.07½	.09¼	.09
May	.07½	.07½	.09½	.09⅛
June	.08½	.08¼	.09⅛	.08¾
July	.08½	.08¼	.09⅛	.08⅞
August	.09	.08¾	.08⅝	.08½
September	.10	.09	.08¾	.08
October	.09½	.09¼	.08¾	.08⅝
November	.09¼	.09¼	.08⅝	.08⅛
December	.09¼	.09	.08⅝	.08⅛
Year	.10	.06¼	.09¾	.08

Cottonseed Oil, Prime Crude
(F.o.b. Southeast)

October 18, 1871, the price was 44c. to 46c. per gallon; 1881, 45c. to 50c.; 1891, 30c. to 31c.; 1901, 30c. to 31c.; 1911, 33c.; 1913, 43c. to 43½c. per gallon; 1919, June, 22.50c. per pound.

(Tank cars)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.0700	$0.0675	$0.08875	$0.08375
February	.0850	.0775	.0775	.07625
March	.0800	.0750	.0850	.07875
April	.0750	.07125	.0900	.0825
May	.07875	.0725	.0900	.0875
June	.0800	.0800	Nominal	
July	Nominal		Nominal	
August	.0900	.0775	Nominal	
September	.1000	.0875	.0850	.07871½
October	.1000	.0900	.0837½	.0800
November	.0925	.08875	.0850	.07871½
December	.0887½	.0850	.0850	.0837½
Year	.1000	.0675	.0900	.07625

Cottonseed Oil, Prime Summer Yellow

October 18, 1871, the price was 53c. to 56c. per gallon; in 1881, 56c. to 57½c. per gallon; 1891, 34c. to 35c. per gallon; 1901, 38c. to 40c. per gallon; 1911, 6c. to 6.12½c. per pound; 1913, 6.85c. to 6.90c.; 1919, July, 27.50c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.0860	$0.0835	$0.1025	$0.0975
February	.0975	.0875	.0950	.0900
March	.0950	.0930	.0973	.0925
April	.0900	.0850	.1060	.0955
May	.0918	.0875	.1070	.1030
June	.0925	.0910	.1030	.1010
July	.0985	.0900	.0950	.0930
August	.1000	.0940	.0950	.0900
September	.1150	.1025	.1025	.0850
October	.1115	.1045	.1025	.0940
November	.1070	.1010	.0980	.0920
December	.1035	.0990	.1014	.0980
Year	.1150	.0835	.1070	.0850

Flaxseed

Highest and lowest prices of cash flaxseed at Minneapolis monthly in the past two years were as follows:—

	1927. H.	1927. L.	1928 H.	1928 L.
January	$2.31⅞	$2.20½	$2.27½	$2.14
February	2.32⅞	2.29¾	2.28¼	2.23½
March	2.30½	2.21½	2.37½	2.27⅜
April	2.30¼	2.22	2.40	2.29¾
May	2.35¾	2.27	2.45½	2.40
June	2.29¾	2.21	2.42¾	2.35¼
July	2.27½	2.19¼	2.34½	2.12¾
August	2.35	2.25	2.15	2.02½
September	2.27	2.18¼	2.20¾	2.02¼
October	2.19¾	2.06	2.34	2.16½
November	2.18¾	2.05¼	2.47	2.27¾
December	2.15¾	2.12¼	2.42¾	2.35¼
Year	2.38¾	2.05¼	2.47	2.02¼

Linseed Oil

October 18, 1871, the price was 81c. to 82c.; 1881, 59c. to 60c.; 1891, 40c.; 1901, 65c. to 66c.; 1911, 88c. to 89c.; 1913, 46c.; 1919, July, $2.22.

(Car lots)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.1070	$0.1020	$0.1000	$0.0940
February	.1040	.1030	.1010	.0970
March	.1080	.1030	.1000	.0980
April	.1080	.1030	.1000	.0960
May	.1120	.1090	.0960	.0940
June	.1150	.1120	.1040	.1020
July	.1090	.1050	.1020	.0990
August	.1120	.1100	.0990	.0970
September	.1040	.1030	.0990	.0950
October	.1010	.0960	.1040	.1000
November	.1000	.0960	.1040	.0990
December	.0960	.0940	.1020	.1000
Year	.1150	.0940	.1040	.0950

Olive Oil, Edible

January 19, 1918, the price was $3 to $3.25; 1918, November, $7.50.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$2.00	$2.00	$2.50	$2.50
February	2.20	2.00	2.50	2.25
March	2.20	2.20	2.25	2.25
April	2.20	2.20	2.25	2.25
May	2.50	2.20	2.25	2.20
June	2.50	2.40	2.20	2.20
July	2.50	2.50	2.20	2.20
August	2.50	2.50	2.20	2.20
September	2.50	2.50	2.25	2.20
October	2.50	2.50	2.25	2.25
November	2.50	2.50	2.25	2.25
December	2.50	2.50	2.25	2.25
Year	2.50	2.00	2.50	2.20

Olive Oil, Prime Foots

May 13, 1879, the price was 8½c.; October 18, 1881, 7½c.; 1891, 5¼c. to 5½c.; 1901, 5c. to 5¼c.; 1911, 7¼c. to 7½c.; 1913, 7¾c. to 8c.; 1918, May, 45c.

(In casks)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09⅝	$0.09½	$0.09½	$0.09½
February	.09⅝	.09⅝	.09⅞	.09½
March	.10	.09¾	.10	.09⅞
April	.09½	.09⅝	.10¼	.10
May	.09½	.09½	.10½	.10¼
June	.09⅝	.09	.10½	.10
July	.08⅞	.08⅝	.10	.09⅝
August	.09½	.08⅝	.10¼	.09⅝
September	.10½	.10¼	.10¾	.10⅛
October	.10	.09⅞	.10½	.10⅛
November	.10	.09⅞	.10½	.10¼
December	.09⅞	.09½	.10⅝	.10¼
Year	.10½	.08⅝	.10¾	.09½

Olive Oil, Denatured

October 18, 1871, the price was $1.22 to $1.25; 1881, $1 to $1.10; 1891, 62c. to 65c.; 1901, 58c. to 62c.; 1911, 85c. to 89c.; 1913, 83c. to 85c.; 1919, January, $3.50.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.35	$1.35	$1.40	$1.25
Feoruary	1.80	1.35	1.25	1.25
March	1.75	1.65	1.25	1.25
April	1.65	1.65	1.25	1.25
May	1.70	1.65	1.25	1.25
June	1.80	1.70	1.25	1.25
J ly	1.80	1.80	1.25	1.20
August	1.70	1.70	1.20	1.20
September	1.75	1.70	1.35	1.35
October	1.75	1.75	1.35	1.35
November	1.70	1.60	1.35	1.35
December	1.60	1.40	1.35	1.35
Year	1.80	1.35	1.40	1.20

Palm Oil, Lagos

October 18, 1871, the price was 8c. to 8¾c.; 1881, 7¼c. to 7½c.; 1891, 6c. to 6½c.; 1901, 5½c. to 5¾c.; 1911, nominal; 1913, 7⅛c. to 7¾c.; 1918, May, 40c.

(In casks)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08½	$0.08¼	$0.08	$0.07⅝
February	.08⅝	.08¼	.08	.07⅝
March	.08¾	.08¼	.07⅞	.07⅝
April	.08½	.08¼	.07⅞	.07⅝
May	.08¼	.08¼	.08	.07⅝
June	.08½	.07⅞	.07⅞	.07⅝
July	.07½	.07½	.08	.08
August	.07⅝	.07½	.08	.07⅝
September	.07⅞	.07½	.08½	.08
October	.07⅞	.07⅝	.09¼	.08½
November	.07⅞	.07⅝	.09¼	.08⅝
December	.07⅝	.07⅝	.09¼	.08⅝
Year	.08¾	.07½	.09¼	.07⅝

Palm Kernel Oil

February 26, 1910, the price was 8¾c. to 8½c.; October 18, 1911, 9¼c.; 1913, 10½c. to 10¾c.; October, 1919, 22c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09	$0.09	$0.09½	$0.09¼
February	.09¼	.09	.09¼	.09¼
March	.09¼	.09¼	.09¼	.09¼
April	.09¼	.08⅞	.09½	.09½
May	.09	.08⅞	.09¼	.09½
June	.09	.08⅝	.09¼	.09
July	.09	.08⅝	.09	.09
August	.09¼	.09	.09	.09
September	.09¼	.09	.09½	.09¼
October	.09¼	.09	.09½	.09¼
November	.09¼	.09¼	.09½	.09¼
December	.09¼	.09¼	.09¼	.09¼
Year	.09¼	.08⅞	.09¼	.09

Peanut Oil, Crude
(F.o.b. Mills)

November 13, 1909, the price was 8c.; October 18, 1911, 7c. to 7¼c.; 1913, 6¼c. to 7½c.; 1919, November, $1.80.

(In buyers' tanks)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09	$0.08½	$0.09½	$0.09½
February	.08½	.08½	.10	.10
March	.11	.11	.10	.09¼
April	.12½	.12½	.09¼	.09¼
May	.12½	.12½	.09¾	.09¾
June	.12½	.12½	.09¾	.09¾
July	.12½	.12½	.09¾	.09
August	.12½	.12½	.09¼	.09¼
September	.12½	.12½	.09¼	.09¼
October	.12	.10½	.10	.09¼
November	.10½	.10½	.10	.10
December	.10	.09½	.10	.10
Year	.12½	.08½	.10	.09

Perilla Oil

August 5, 1918, the price was 19c.; 1919, August, 20c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13	$0.13	$0.13	$0.12¾
February	.13	12½	.13	.13
March	.13¾	.13¼	.13½	.13
April	.14½	.13¾	.13	.13
May	.16½	.16½	.13½	.13½
June	.16½	.16½	.13½	.13½
July	.16½	.16½	.13¾	.13½
August	.16½	.15	.13¾	.13½
September	.15	.15	.13½	.13½
October	.15	.14½	.18	.15½
November	.14½	.14¼	.18	.18
December	.14¾	.14¼	.18	.18
Year	.16½	.12½	.18	.12¾

Rapeseed Oil, Blown

May 12, 1902, the price was 67c. to 68c.; October 18, 1901, 66½c. to 67c.; 1911, 72c. to 75c.; 1913, 67c. to 68c.; 1918, September, $2.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.95	$0.95	$1.01	$1.01
February	.95	.90	1.01	1.01
March	.90	.90	1.01	1.01
April	.90	.90	1.01	1.01
May	1.02	.90	1.03	1.03
June	1.02	1.02	1.03	1.03
July	1.02	1.02	1.03	1.03
August	1.02	1.02	1.04	1.04
September	1.03	1.02	1.04	1.04
October	1.03	1.03	1.04	1.03
November	1.03	1.03	1.03	1.03
December	1.01	1.01	1.03	1.03
Year	1.03	.90	1.04	1.01

Rapeseed Oil, Refined

October 18, 1871, the price was $1.15 to $1.30; 1881, 85c. to $1; 1891, 67½c. to 70c.; 1901, 68c. to 72c.; 1911, 69c. to 72c.; 1918, 63c. to 64c.; 1918, October, $1.92.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.79	$0.78	$0.82	$0.79
February	.76	.75	.88	.85
March	.82	.81	.85	.85
April	.82	.82	.88	.86
May	.92	.80	.90	.90
June	.80	.79	.90	.88
July	.79	.78	.90	.87
August	.82	.79	.91	.88
September	.85	.82	.87	.83
October	.85	.83	.83	.82
November	.82	.81	.82	.81
December	.81	.79	.84	.81
Year	.85	.75	.91	.79

Sesame Oil, Refined

December 7, 1873, the price was $1.15 to $1.20; October 18, 1881, $1 to $1.10; 1891, 72c. to 75c.; 1901, 67c. to 70c.; 1911, 75c. to 85c.; 1918, November, $4.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13	$0.13	$0.14	$0.13
February	.13	.13	.14	.14
March	.13	.13	.14	.14
April	.13	.13	.14¼	.14
May	.14	.13	.14¼	.14¼
June	.14	.13	.14¼	.14¼
July	.13	.13	.14¼	.14¼
August	.13	.13	.14¼	.14¼
September	.13	.13	.14¼	.14¼
October	.13	.13	.14¼	.12½
November	.13	.13	.12½	.12½
December	.13	.13	.12½	.12½
Year	.14	.13	.14¼	.12½

Soya Bean Oil, Crude

December 18, 1909, the price was 6½c. to 6¾c.; October 18, 1911, 7½c. to 7¾c.; 1913, 6⅞c. to 6½c.; 1918, July, 20¼c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12	$0.11¾	$0.12	$0.12
February	.12	.12	.12	.12
March	.12	.12	.12	.12
April	.12¼	.12	.12	.12
May	.12½	.12¼	.12¼	.12¼
June	.12¾	.12	.12¼	.12¼
July	.12	.12	.12¼	.12¼
August	.12	.12	.12¼	.12¼
September	.12	.12	.12¼	.12¼
October	.12	.12	.12¼	.12¼
November	.12	.12	.12¼	.12¼
December	.12	.12	.12¼	.12¼
Year	.12½	.11¾	.12¼	.12

Tallow, Vegetable
(C.i.f. Pacific Coast)

December 9, 1918, the price was 16c.; 1919, June, 22c.

(In mats)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07⅜	$0.07⅜	$0.08	$0.08
February	.07⅜	.07⅜	.08	.07⅝
March	.07⅜	.07⅜	.07⅝	.07⅝
April	.07⅜	.07½	.07⅝	.07⅝
May	.07½	.07½	.07⅝	.07⅝
June	.07½	.07½	.07⅝	.07⅝
July	.07½	.07¼	.07⅝	.07⅝
August	.08⅛	.08⅛	.07⅝	.07⅝
September	.08⅛	.08	.07⅝	.07⅝
October	.08⅛	.08	.07⅝	.07⅝
November	.08	.08	.08⅛	.07⅝
December	.08	.08	.08⅛	.08⅛
Year	.08⅛	.07¼	.08⅛	.07⅝

Tea Oil
(F.o.b. Pacific Coast)

August 5, 1918, the price was 24c. to 25c.; 1918, September $3.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.14¼	$0.14¼	$0.15¼	$0.15¼
February	.14¼	.14¼	.15¼	.15¼
March	.14¼	.14¼	.15¼	.15¼
April	.15½	.14¼	.15¼	.15¼
May	.15½	.15¼	.18	.15¾
June	.15¼	.15¼	.18	.18
July	.15¼	.15¼	.18	.18
August	.15¼	.15¼	.18	.18
September	.15¼	.15¼	.18	.18
October	.15¼	.15¼	.18	.18
November	.15¼	.15¼	.18½	.18
December	.15¼	.15¼	.18½	.18½
Year	.15½	.14¼	.18½	.15¼

Greases, Lard, Stearins and Tallows

Grease, White

March 4, 1907, the price was 5½c. to 5¾c.; October 18, 1911, 5¼c. to 5¾c.; 1913, 4¼c. to 5¼c.; 1918, June, 16¼c.

(In tierces)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07½	$0.07⅜	$0.08½	$0.08
February	.07½	.07½	.08¼	.07⅝
March	.07½	.07½	.07⅜	.07½
April	.07½	.07	.07⅜	.07¼
May	.07⅜	.07	.08	.07½
June	.07⅜	.07⅜	.07½	.07⅛
July	.07⅜	.07⅜	.07½	.07½
August	.07⅜	.07⅜	.07½	.07½
September	.07½	.07⅜	.07⅜	.07⅝
October	.08⅛	.07⅝	.08⅜	.07⅝
November	.08	.07⅜	.08⅜	.08⅜
December	.08	.07⅜	.08⅜	.08⅜
Year	.08⅛	.07	.08⅜	.07¼

Grease, House

November 16, 1901, the price was 5¼c. to 5½c.; October 18, 1911, 5¾c. to 6¼c.; 1913, 5¼c. to 5¾c.; 1919, July, 16½c.

(In tierces)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06½	$0.06¼	$0.07⅜	$0.07⅛
February	.06⅜	.06⅜	.07¾	.07
March	.06⅜	.06⅜	.06⅞	.06⅜
April	.06⅜	.06⅜	.07	.06⅞
May	.06⅜	.06⅜	.07⅜	.07⅛
June	.06⅜	.06⅜	.07⅛	.07⅛
July	.06⅜	.06⅜	.07⅛	.07⅛
August	.06⅜	.06⅜	.07⅛	.07⅛
September	.07⅛	.06⅜	.07⅜	.07⅜
October	.07⅜	.07⅜	.08⅛	.07⅝
November	.07⅜	.07⅜	.08⅛	.08⅛
December	.07⅝	.07⅛	.08⅛	.08⅛
Year	.07⅜	.06⅛	.08⅛	.06⅝

Lard, City

February 18, 1874, the price was 9⅜c. per pound; October 18, 1881, 12c.; 1891, 6.30c. to 6.50c.; 1901, 9.20c. to 9.30c.; 1911, 8¾c.; 1913, 10½c.; 1919, June, 35½c.

(In tierces)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$12.75	$12.50	$12.00	$11.75
February	12.75	12.75	11.75	11.00
March	12.75	12.75	11.50	11.25
April	12.75	12.50	12.00	11.50
May	12.75	12.50	12.00	11.75
June	12.75	12.50	11.75	11.50
July	12.75	12.50	12.25	11.75
August	12.50	12.25	12.75	12.25
September	13.25	12.50	13.00	12.75
October	12.75	12.35	12.50	12.00
November	12.50	12.25	11.75	11.50
December	12.25	11.75	11.50	11.25
Year	13.25	11.75	13.00	11.00

Lard, Compound

February 8, 1897, the price was 4c. to 4¾c. per pound; October 18, 1901, 8c. to 8⅛c.; 1911, 7½c. to 7¾c.; 1913, 8⅜c. to 8⅝c.; 1919, July, 30c.

(In tierces)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$10.00	$10.00	$12.75	$12.50
February	11.50	10.00	12.25	11.50
March	11.50	11.00	11.50	11.25
April	11.00	11.00	12.50	11.50
May	11.25	11.00	12.50	12.50
June	11.25	11.25	12.50	12.00
July	11.75	11.25	12.25	12.00
August	12.25	11.75	12.00	11.50
September	13.75	12.75	11.75	11.75
October	13.75	13.75	12.00	11.75
November	13.25	13.25	11.75	11.75
December	13.00	12.75	12.00	12.00
Year	13.75	10.00	12.75	11.25

Lard, Middle Western

April 29, 1907, the price was 9.10c. per pound. October 18, 1911, 9.40c.; 1913, 10¾c. to 10⅝c.; 1919, June, 36¼c.

(In tierces)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$13.00	$12.80	$12.40	$12.00
February	13.00	12.80	12.00	11.35
March	12.95	12.85	11.90	11.55
April	12.85	12.65	12.55	11.90
May	12.90	12.65	12.45	12.00
June	13.25	12.95	12.15	11.75
July	13.15	12.85	12.70	12.30
August	12.90	12.50	12.90	12.05
September	13.60	12.90	13.35	13.00
October	13.15	12.90	12.80	12.15
November	12.70	12.55	12.20	11.95
December	12.25	12.00	11.75	11.55
Year	13.60	12.00	13.35	11.35

Lard, Neutral

February 8, 1897, the price was 5c. to 5⅝c. per pound; October 18, 1901, 12¼c. to 12½c.; 1911, 10⅝c.; 1913, 11¾c. to 12c.; 1919, June, 37½c.

(In tierces)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$15.75	$15.50	$14.75	$14.00
February	15.75	15.75	13.75	13.00
March	15.25	15.00	12.50	12.50
April	15.00	14.00	13.75	12.50
May	14.00	13.75	13.75	13.25
June	13.75	13.75	13.25	13.25
July	13.50	13.50	13.25	13.25
August	13.50	13.50	14.50	14.50
September	13.50	13.50	14.50	14.50
October	13.50	13.00	15.50	14.00
November	15.00	13.00	14.00	13.50
December	15.00	14.75	13.50	13.50
Year	15.75	13.00	15.50	12.50

Stearin, Oleo

January 4, 1891, the price was 6¼c. to 6½c.; October 18, 1901, 11½c. to 11¾c.; 1911, 10¼c.; 1913, 8½c. to 8¾c.; 1919, July, 41c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09¾	$0.09	$0.10⅝	$0.10
February	.10¼	.09¾	.09⅞	.09¾
March	.10⅛	.10¼	.11	.09⅝
April	.09½	.09⅛	.11⅛	.11⅛
May	.10¼	.09½	.11⅜	.10½
June	.09⅞	.09½	.10¾	.09½
July	.10⅜	.09½	.10⅜	.09¾
August	.10⅝	.10⅜	.11	.10¼
September	.12⅞	.11⅝	.12½	.11½
October	.13¼	.12⅝	.12⅝	.11
November	.12⅛	.11¼	.10¾	.10⅝
December	.10¼	.09⅞	.11⅛	.10⅜
Year	.13¼	.09	.12½	.09⅜

Tallow, Edible

December 22, 1906, the price was 7¼c.; October 18, 1911, 7⅜c. to 8c.; 1913, 8c. to 8½c.; 1919, July, 27c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08½	$0.08¼	$0.10¼	$0.10
February	.08½	.08½	.10	.10
March	.08¾	.08½	.10⅛	.09⅞
April	.08⅝	.08⅝	.10⅛	.10
May	.08½	.08	.10	.09¾
June	.08¼	.08¼	.09¾	.09¾
July	.08¼	.08¼	.09¾	.09¾
August	.08½	.08¼	.09¾	.09¾
September	.09½	.08½	.10	.09¾
October	.10	.08¾	.10½	.10
November	.10	.09¾	.10½	.10¼
December	.10¼	.09¾	.10⅝	.09¾
Year	.10½	.08	.10⅝	.09¾

Tallow, Special, Loose

August 26, 1911, the price was 7c. to 7¼c.; October 18, 1911, 7½c. to 7⅝c.; 1913, 6⅞c.; 1919, July, 21c.

(In car lots)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.07½	$0.07⅛	$0.08⅞	$0.08⅝
February	.07⅝	.07⅝	.08⅝	.08⅜
March	.07¾	.07½	.08½	.08⅜
April	.07½	.07⅝	.08⅜	.08¼
May	.07⅝	.07⅝	.08¼	.08
June	.07⅝	.07½	.08	.08
July	.07½	.07½	.08	.08
August	.07¾	.07½	.08	.08
September	.08¼	.08	.08⅝	.08¼
October	.09	.08	.09⅛	.08⅝
November	.08⅞	.08¼	.09⅛	.09⅛
December	.08⅝	.08¼	.09⅛	.08⅞
Year	.09	.07⅛	.09⅛	.08

Animal Oils

Degras, American

November 28, 1903, the price was 2½c. to 2¾c.; October 18, 1911, 2¼c.; 1913, 3c.; 1918, October, 20½c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04¾	$0.04¾	$0.04½	$0.04½
February	.04¾	.04¾	.04½	.04½
March	.04¾	.04¾	.04½	.04½
April	.04¾	.04¾	.04½	.04½
May	.04¾	.04¾	.04½	.04½
June	.04¾	.04¾	.04½	.04½
July	.04¾	.04¾	.04½	.04½
August	.04¾	.04¾	.04½	.04½
September	.04¾	.04½	.04½	.04½
October	.04½	.04½	.04½	.04½
November	.04½	.04½	.04½	.04½
December	.04½	.04½	.04½	.04½
Year	.04¾	.04½	.04½	.04½

Degras, English

January 20, 1875, the price was 7½c. to 8c.; October 18, 1881, 9½c. to 10c.; 1891, 3¼c. to 3½c.; 1901, 3½c. to 3⅝c.; 1911, 2¼c.; 1913, 3⅛c. to 3¼c.; 1918, October, 28c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.05⅝	$0.05⅝	$0.05⅝	$0.05⅝
February	.05⅝	.05⅝	.05⅝	.05⅝
March	.05⅝	.05⅝	.05⅝	.05⅝
April	.05⅝	.05⅝	.05⅝	.05⅝
May	.05⅝	.05⅝	.05⅝	.05⅝
June	.05⅝	.05⅝	.05⅝	.05⅝
July	.05⅝	.05⅝	.05⅝	.05⅝
August	.05⅝	.05⅝	.05⅝	.05⅝
September	.05⅝	.05⅝	.05⅝	.05
October	.05⅝	.05⅝	.05	.05
November	.05⅝	.05⅝	.05	.05
December	.05⅝	.05⅝	.05	.05
Year	.05⅝	.05⅝	.05⅝	.05

Horse Grease

March 24, 1875, the price was 80c. to 85c.; the next quotation was November 29, 1913, 6½c. to 7⅛c.; 1918, February, 19c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09	$0.09	$0.09½	$0.09½
February	.09	.09	.09½	.09½
March	.09	.09	.09½	.09½
April	.09	.09	.09½	.09½
May	.09	.09	.09½	.09½
June	.09	.09	.09½	.09½
July	.09¼	.09¼	.09½	.09½
August	.09¼	.09¼	.09½	.09½
September	.09½	.09¼	.09½	.09½
October	.09¼	.09½	.09½	.09½
November	.09½	.09½	.09½	.09½
December	.09½	.09½	.09½	.09½
Year	.09½	.09	.09½	.09½

Lard Oil, Extra No. 1

February 15, 1876, the price was 95c. to $1; October 18, 1881, 85c. to 90c.; 1891, 47c. to 50c.; 1901, 52c. to 54c.; 1911, 60c. to 64c.; 1913, 58c. to 59c.; 1918, October, $1.70.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$10.75	$10.50	$12.50	$12.25
February	11.25	10.75	12.50	11.75
March	11.25	11.25	11.75	11.50
April	11.25	11.00	12.00	12.00
May	11.50	11.00	12.00	12.00
June	11.50	11.50	12.25	12.00
July	11.50	11.25	12.25	12.25
August	11.25	11.25	12.25	12.25
September	11.50	11.50	12.75	12.25
October	13.25	12.25	13.00	12.75
November	13.00	12.75	13.25	13.00
December	12.75	12.25	13.00	12.75
Year	13.25	10.50	13.25	11.50

Lard Oil, No. 2

October 18, 1871, the price was 65c. to 68c.; 1881, 53c. to 62½c.; 1891, 35c. to 37c.; 1901, 41c. to 42c.; 1911, 56c. to 60c.; 1913, 52c. to 53c.; 1918, September, $1.50.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$10.00	$10.00	$11.25	$11.00
February	10.50	10.00	11.25	10.75
March	10.50	10.50	10.75	10.75
April	10.25	10.25	11.25	11.00
May	10.25	10.25	11.25	11.00
June	10.25	10.25	11.25	11.00
July	10.25	10.12½	11.25	11.25
August	10.25	10.25	11.25	11.00
September	10.50	10.50	11.25	11.25
October	10.75	10.50	12.25	11.75
November	11.00	11.00	12.50	12.00
December	11.00	11.00	12.50	12.00
Year	11.00	10.00	12.50	10.75

Neatsfoot Oil, Pure

October 18, 1871, the price was $1 to $1.10; 1881, 80c. to 90c.; 1891, 60c. to 70c.; 1901, 52c. to 53c.; 1911, 75c. to 80c.; 1913, 64c. to 65c.; 1918, October, $2.50.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$13.00	$12.75	$16.50	$16.25
February	12.75	12.75	16.00	15.50
March	12.75	12.75	15.75	15.50
April	12.75	12.75	15.75	15.75
May	13.25	12.75	15.75	15.75
June	13.75	13.25	15.75	15.50
July	14.75	13.75	15.25	15.25
August	14.75	14.75	15.25	15.25
September	15.25	15.25	15.50	15.25
October	16.75	15.50	15.25	15.25
November	16.75	16.75	15.25	15.25
December	16.75	16.50	15.25	15.25
Year	16.75	12.75	16.50	15.25

Oleo Oil, No. 1

April 24, 1909, the price was 9c. to 14½c.; October 18, 1911, 9¼c. to 11½c.; 1913, 9c. to 12½c.; 1919, June, 35c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$11.00	$10.00	$17.50	$16.75
February	12.25	10.75	16.50	15.00
March	12.25	12.00	14.50	13.50
April	11.75	11.25	14.75	14.25
May	14.00	12.00	15.00	13.25
June	14.25	13.50	14.50	13.75
July	14.25	13.75	13.75	13.25
August	13.75	13.25	13.00	13.00
September	15.75	15.00	13.50	13.25
October	18.75	16.00	13.25	12.75
November	18.50	18.00	12.75	12.00
December	18.00	17.50	11.75	11.25
Year	18.75	10.00	17.50	11.25

Oleo Oil, No. 2

July 29, 1918, the price was 26c.; 1919, June, 33c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$10.00	$9.25	$16.25	$14.50
February	11.25	9.75	14.25	13.25
March	11.25	11.00	13.00	12.50
April	11.00	10.00	14.00	13.25
May	13.00	11.00	14.00	13.50
June	12.75	12.25	13.50	12.75
July	13.00	12.50	12.50	12.25
August	12.50	11.25	11.75	11.75
September	14.75	12.50	12.50	12.25
October	17.50	14.75	12.00	11.75
November	17.00	16.25	11.25	10.75
December	16.25	16.25	11.00	10.25
Year	17.50	9.25	16.25	10.25

Tallow Oil, Acidless

October 18, 1871, the price was 77½c. to 80c.; 1881, 75c. to 85c.; 1891, 45c. to 48c.; 1901, 57c.; 1911, 63c. to 65c.; 1913, 62c. to 63c.; 1919, July, $1.90.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$10.25	$10.25	$11.75	$11.75
February	11.25	10.25	11.75	11.50
March	11.50	10.75	11.50	11.50
April	10.75	10.50	11.50	11.50
May	10.75	10.50	11.50	11.50
June	10.75	10.75	11.50	11.50
July	10.75	10.50	11.50	11.50
August	10.50	10.50	11.50	11.50
September	11.00	10.50	12.00	11.50
October	11.50	11.25	12.00	12.00
November	12.25	12.25	12.25	12.25
December	12.00	11.75	12.25	12.25
Year	12.25	10.25	12.25	11.50

Fatty Acids

Red Oil, Distilled

May 27, 1911, the price was 6½c. to 7½c.; October 18, 1913, 6c. to 6¼c.; 1919, June, 20½c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.09½	$0.09¾	$0.09¾
February	.09½	.09½	.09¾	.09¾
March	.09½	.09½	.09¾	.09¾
April	.09½	.09½	.09¾	.09¾
May	.09½	.09½	.09¾	.09¾
June	.09½	.09½	.09¾	.09¾
July	.09½	.09½	.09¾	.09¾
August	.09½	.09½	.09¾	.09¾
September	.09¾	.09½	.09¾	.09¾
October	.09¾	.09¾	.09¾	.09¾
November	.09¾	.09¾	.09¾	.09¾
December	.09¾	.09¾	.09¾	.09¾
Year	.09¾	.09½	.09¾	.09¾

Red Oil, Saponified

October 18, 1871, the price was 55c. to 57c.; 1881, 60c.; 1891, 5c. to 5¼c.; 1901, 6¼c. to 6½c.; 1911, 7c. to 7½c.; 1913, 6½c. to 7c.; 1919, July, 20½c.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09¾	$0.09¾	$0.10	$0.10
February	.09¾	.09¾	.10	.10
March	.09¾	.09¾	.10	.10
April	.09¾	.09¾	.10	.10
May	.09¾	.09¾	.10	.10
June	.09¾	.09¾	.10	.10
July	.09¾	.09¾	.10	.10
August	.09¾	.09¾	.10	.10
September	.10	.09¾	.10	.10
October	.10	.10	.10	.10
November	.10	.10	.10	.10
December	.10	.10	.10¼	.10
Year	.10	.09¾	.10¼	.10

Stearic Acid, Double Pressed

May 16, 1908, the price was 10c. to 10¼c.; October 18, 1911, 10¼c. to 10½c.; 1919, July, 31½c.

(In bags)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12	$0.12	$0.11¾	$0.11¾
February	.12	.12	.11¾	.11¾
March	.11½	.11½	.11¾	.11¾
April	.11½	.11½	.11¾	.11¾
May	.11½	.11½	.11¾	.11¾
June	.11½	.11½	.11¾	.11¾
July	.11½	.11½	.11¾	.11¾
August	.11½	.11	.12¼	.11¾
September	.11½	.11	.14	.12¼
October	.11¾	.11¾	.18	.14½
November	.11¾	.11¾	.18	.18
December	.11¾	.11¾	.18	.18
Year	.12	.11	.18	.11¾

Stearic Acid, Triple Pressed

June 12, 1915, the price was 13c. to 13½c.; 1919, July, 34c.

(In bags)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.14	$0.14	$0.13¾	$0.13¾
Februdry	.14	.14	.13¾	.13¾
March	.13½	.13½	.13¾	.13¾
April	.13½	.13½	.13¾	.13¾
May	.13½	.13½	.13¾	.13¾
June	.13½	.13½	.13¾	.13¾
July	.13½	.13½	.13¾	.13¾
August	.13½	.13	.15	.13¾
September	.13½	.13	.16½	.15
October	.13¾	.13¾	.20	.17
November	.13¾	.13¾	.20	.20
December	.13¾	.13¾	.20	.20
Year	.14	.13	.20	.13¾

Fish Oils

Cod Oil, Newfoundland

October 18, 1871, the price was 67½c. to 70c.; 1881, 42¼c. to 47c.; 1891, 42c. to 43c.; 1901, 34c. to 35c.; 1911, 54c. to 57c.; 1913, 40c. to 42c., 1918, October, $1.60.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.63	$0.63	$0.63	$0.63
February	.63	.63	.63	.63
March	.63	.63	.67	.67
April	.63	.63	.68	.67
May	.63	.63	.68	.68
June	.63	.63	.68	.68
July	.63	.63	.68	.68
August	.63	.63	.68	.68
September	.63	.63	.68	.68
October	.63	.63	.66	.66
November	.63	.63	.66	.66
December	.63	.63	.65	.65
Year	.63	.63	.68	.63

Herring Oil

(F. o. b. Pacific Coast)

October 31, 1888, the price was 35c.; October 18, 1901, nominal; 1911, 50c.; 1918, nominal; 1918, October, $1.20.

(In sellers' tanks)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.42	$0.42	$0.40	$0.40
February	.42	.42	.40	.40
March	.42	.42	.40	.40
April	.42	.42	.40	.40
May	.42	.42	.40	.40
June	.42½	.42	.40	.40
July	.42½	.42½	.40	.40
August	.42½	.42½	.40	.40
September	.42½	.42½	.40	.40
October	.42½	.40	.40	.40
November	.40	.40	.40	.40
December	.40	.40	.40	.40
Year	.42½	.40	.40	.40

Menhaden Oil, Southern, Crude

(F.o.b. Baltimore)

December 1, 1886, the price was 18c. to 19c.; October 18, 1901, 25c.; 1911, 35c.; 1913, 35c.; 1918, September, $1.27.

(In tankcars)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.40	$0.40	$0.40	$0.40
February	.47½	.40	.40	.40
March	.47½	.47½	.40	.40
April	.47½	.47½	.40	.40
May	.47½	.47½	.42½	.40
June	.47½	.47½	.45	.41
July	.47½	.44	.42½	.41
August	.43½	.42	.42½	.40
September	.46	.43½	.41	.40
October	.45	.44	.47½	.42½
November	.44	.44	.50	.47½
December	.44	.40	Nominal	
Year	.47½	.40	.50	.40

Menhaden Oil, Light Pressed

October 18, 1871, the price was 41c.; 1881, nominal; 1891, nominal; 1901, 34c. to 35c.; 1911, 50c. to 54c.; 1913, 42c. to 44c.; 1918, November, $1.50.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.58	$0.58	$0.60	$0.60
February	.60	.58	.60	.60
March	.60	.60	.60	.60
April	.60	.60	.60	.60
May	.60	.60	.62	.60
June	.60	.60	.62	.62
July	.60	.60	.62	.60
August	.59	.58	.60	.60
September	.60	.59	.60	.60
October	.60	.60	.60	.60
November	.60	.60	.62	.60
December	.60	.60	.62	.62
Year	.60	.58	.62	.60

Menhaden Oil, Yellow Bleached

January 3, 1910, the price was 33c. to 34c.; October 18, 1911, 48c. to 51c.; 1913, 40c. to 42c.; 1918, September, $1.47.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.61	$0.61	$0.63	$0.63
February	.63	.61	.63	.63
March	.63	.63	.63	.63
April	.63	.63	.63	.63
May	.63	.63	.65	.63
June	.63	.63	.65	.65
July	.63	.63	.65	.62
August	.62	.61	.62	.62
September	.63	.62	.62	.62
October	.63	.63	.62	.62
November	.63	.63	.64	.62
December	.63	.63	.64	.64
Year	.63	.61	.65	.62

Salmon Oil

(F.o.b. Pacific Coast)

July 29, 1918, the price was 90c.; 1918, December, $1.35.

(In sellers' tanks)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.42	$0.42	$0.44	$0.44
February	.42	.42	.44	.44
March	.42	.42	.44	.44
April	.42	.42	.44	.44
May	.42	.42	.44	.44
June	.45	.42	.44	.44
July	.45	.44	.44	.44
August	.44	.44	.44	.44
September	.44	.44	.44	.44
October	.44	.44	.44	.44
November	.44	.44	.44	.44
December	.44	.44	.44	.44
Year	.45	.42	.44	.44

Sardine Oil

(F.o.b. Pacific Coast)

July 29, 1918, the price was $1.08 to $1.10; 1918, January, $1.23.

(In sellers' tanks)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.42	$0.42	$0.40	$0.40
February	.42	.42	.40	.40
March	.42	.42	.40	.40
April	.42	.40	.40	.40
May	.40	.40	.40	.40
June	.45	.40	.40	.40
July	.45	.40	.40	.40
August	.45	.42½	.40	.40
September	.42½	.42½	.40	.40
October	.42½	.40	.40	.40
November	.40	.40	.45	.45
December	.40	.40	.45	.45
Year	.45	.40	.45	.40

Sperm Oil, Bleached

October 18, 1871, the price was $1.40 to $1.42½; 1881, $1.10 to $1.12; 1891, 77c. to 80c.; 1901, 68c. to 68c.; 1911, 74c. to 76c.; 1913, 72c. to 73c.; 1918, April, $2.25.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.84	$0.84	$0.84	$0.84
February	.84	.84	.84	.84
March	.84	.84	.84	.84
April	.84	.84	.84	.84
May	.84	.84	.84	.84
June	.84	.84	.84	.84
July	.84	.84	.84	.84
August	.84	.84	.84	.84
September	.84	.84	.84	.84
October	.84	.84	.84	.84
November	.84	.84	.84	.84
December	.84	.84	.84	.84
Year	.84	.84	.84	.84

Sperm Oil, Natural

On October 18, 1871, the price was $1.35 to $1.37½; 1881, $1.05 to $1.07; 1891, 72c. to 75c.; 1901, 61c. to 63c.; 1911, 71c. to 73c.; 1913, 69c.; 1918, April, $2.25.

(In barrels)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.81	$0.81	$0.78	$0.78
February	.81	.81	.78	.78
March	.81	.81	.78	.78
April	.81	.81	.78	.78
May	.81	.81	.78	.78
June	.81	.81	.78	.78
July	.81	.81	.78	.78
August	.81	.81	.78	.78
September	.81	.81	.78	.78
October	.78	.78	.78	.78
November	.78	.78	.78	.78
December	.78	.78	.78	.78
Year	.81	.78	.78	.78

(Continued on page 106)

Petroleum and Its Products: Market Review

Substantial improvement in the position of the petroleum market developed during 1928. While the menace of overproduction again became acute during the latter part of the year, the industry closed 1928 in much stronger position than at the end of 1927. From the standpoint of earnings, many of the large integrated companies showed record results for 1928, and improvement was also shown by the producing companies in some instances. In the main, however, the market last year benefited the integrated companies and the refining and marketing groups, rather than those organizations confining their operations strictly to crude petroleum production. Prices on principal grades of both crude and refined closed 1928 at levels considerably over those in effect at the start of the year in most instances.

Material progress was scored last year in the conservation program of the industry. With potential output of crude sufficiently large to more than double domestic production almost overnight, leaders in the industry were able to receive sufficient co-operation from producing interests to make effective the curtailment program which had been talked for several years past. Efforts were launched during the year to prevail upon operators in South American fields to adopt a curtailment program in line with the action of domestic producers, but up to the close of the year nothing tangible had been accomplished in this direction.

While total production of crude in domestic fields was smaller last year than the record output of the previous years, there were definite indications that 1929 would witness the establishment of a new high record for all time, unless drastic steps were taken to correct the situation prevailing in several sections of the country where production has been increasing recently. Notwithstanding the cutting of domestic crude output in 1928, there was a further gain in stocks of all oils held by the industry, although holdings of gasoline at the end of the year were smaller than those at the close of 1927.

With co-operative action showing favoring results in the producing end of the business, refiners and marketers succeeded in getting together late in the year in the adoption of a code of ethics to govern marketing operations. This code, it was expected, would eliminate many of the evils which had crept into marketing operations during the intensive drive for gallonage on the part of many of the major factors in the market during the past several years.

Automobile Output Up

Automobile production in the United States for 1928 approximated 4,607,000 vehicles, a new high record and an increase of about 1,027,000 over 1927. In establishing a new production record for the year, the automobile industry showed a marked expansion in export activities.

A feature of the production trend in automobiles during 1928 was the marked swing toward high compression engines. This trend had a direct bearing upon the production and consumption of so-called "premium gasolines" by the American petroleum industry, marked expansion in both output and demand being recorded during the year.

According to reports from leading automobile manufacturers, the outlook for business in the automotive industry during 1929 is favorable, and it is expected that sales totals for the year will at least equal those recorded during 1928. Leading manufacturers have established a broader demand for their cars abroad, and it is indicated that much of the 1929 marketing campaign will center on further expansion in foreign trade.

Little New Financing

Improved conditions in the petroleum industry were reflected by a sharp falling off in the volume of new financing during the year. There were few major financing operations during the year. On the contrary, a number of the larger companies strengthened their financial structure by the retirement of preferred stock and bond issues.

Several of the pipeline companies readjusted their financial structure by reducing the par value of their stocks and paying to stockholders large cash dividends in partial liquidation. These changes were dictated by the failing business of the pipeline companies and the improbability of any further expansion in operations.

Several of the larger companies declared substantial stock dividends during the year and marketed additional quantities of common stock. This stock, however, was mostly disposed of to the shareholders of the respective companies, and involved relatively little financing in the open market.

A feature of the market, from the financial standpoint, was announcement late in the year of the pending formation of a $100,000,000 petroleum investment trust, to acquire substantial blocks of stocks in leading independent companies. Current indications are that this corporation will ultimately employ capital in excess of $300,000,000 in its operations.

Pipe Line Runs

Comparable data on runs and deliveries of the Eastern pipeline companies covering the month of December, 1928, and the full year, with comparisons for 1927, follow:—

	Barrels					
	Runs from wells		Other receipts		Regular and other deliveries.	
	Dec., 1928.	Dec., 1927.	Dec., 1928.	Dec., 1927.	Dec., 1928.	Dec., 1927.
Buckeye Pipe Line	436,960	433,532	1,833,970	2,306,511	2,674,361	2,419,332
Totals, 12 months	5,737,268	5,520,879	24,802,520	28,304,318	32,951,857	31,387,287
Cumberland Pipe Line	198,839	226,646	160	138	215,191	205,859
Totals, 12 months	2,656,784	3,054,232	1,409	1,437	2,795,788	3,092,858
Eureka Pipe Line	334,400	357,137	388,448	426,660	659,893	789,847
Totals, 12 months	4,425,520	4,566,847	4,528,784	6,055,661	9,411,072	10,155,147
Illinois Pipe Line*	558,262	550,823	403,602	187,802	827,515	863,630
Totals, 12 months	6,867,589	7,128,476	5,049,629	3,534,322	11,958,740	11,448,116
Indiana Pipe Line	5,869	7,062	2,273,783	2,327,936	2,317,921	2,334,800
Totals, 12 months	81,216	110,888	26,850,742	26,972,093	27,088,322	27,017,009
National Transit	145,962	135,509	962,495	855,331	1,176,999	902,647
Totals, 12 months	1,973,674	1,782,593	10,830,128	8,376,839	13,617,612	9,907,031
New York Transit	26,552	22,279	68,414	223,768	189,477	141,303
Totals, 12 months	289,893	272,415	1,938,286	2,498,696	2,526,926	2,760,978
Northern Pipe Line	.....	.....	322,031	483,390	334,705	489,698
Totals, 12 months	.....	.....	5,450,963	5,738,958	5,257,819	5,619,522
Prairie Pipe Line†	.....	.....	.....	.....	5,985,265	5,344,811
Totals, 12 months	.....	.....	.....	.....	66,549,621	64,525,909
Southern Pipe Line	.....	.....	170,763	180,590	149,581	155,900
Totals, 12 months	.....	.....	1,860,241	3,376,486	1,876,390	3,304,267
Southwest Penn. Pipe Line	90,632	83,624	1,033,175	1,021,906	1,235,377	1,073,637
Totals, 12 months	1,079,266	1,060,400	11,327,216	11,936,370	13,674,312	13,000,860

* Illinois fields only. † Exclusive of Pure Oil Co. of Texas deliveries.

Runs from wells by the Eastern group of companies during the month of December averaged 52,025 barrels daily, compared with 53,565 barrels daily in the month of November. The December runs were the lowest for any month as far back as 1919. Petroleum deliveries by the same group of companies averaged 173,572 barrels in December, compared with 176,898 in the previous month. Gross crude oil stocks held by the various pipeline companies in the Pennsylvania, Lima and Kentucky fields at the close of the year totaled 7,539,555 barrels, compared with 12,340,297 barrels at the close of 1927. These stocks of crude oil are the lowest showing on the records as far back as 1920.

Crude Petroleum

Although domestic crude output was running at record high levels at the close of the year, aggregate commercial production for 1928, as estimated by the Oil, Paint and Drug Reporter, was smaller at 883,405,000 barrels, as compared with 903,632,000 barrels in the previous year. Gross production for 1928, including oil burned as fuel on leases, seepage and other loss, was estimated at 892,000,000 barrels, against 912,000,000 barrels similarly estimated for 1927. Peak production for 1928, as estimated by the Oil, Paint and Drug Reporter, averaged 2,539,700 barrels daily, attained during the week ended December 29, against a high of 2,564,400, recorded for the week ended August 6, in the previous year.

The Seminole area in Oklahoma and the Panhandle section in West Texas were the centers of interest, from the production standpoint, during the greater part of the year, although Kansas and California came in for considerable attention during the closing quarter, particularly the latter state, where production recorded sharp gains. Curtailment programs, affecting both drilling and production upon completed, were restricting output in Oklahoma, West Texas and California during most of the year, although the California situation showed a tendency to get out of hand during the latter part of 1928.

Crude oil prices during the first six months of 1928 averaged lower than during the corresponding period in the previous year, but with the record demand for gasoline asserting itself in the early summer season, improvement in crude naturally followed, and posted prices during the last six months of the year were higher than those which had prevailed in the corresponding period of the previous year.

Imported crude was playing an important part in the refinery situation at Atlantic Coast refining points, Venezuelan oil in particular coming in for heavy consumption. The following table shows imports of foreign crude during the first 11 months of 1928, with comparison for the corresponding months of 1927:—

	Barrels	
	First 11 months	
Country—	1928.	1927.
Mexico	15,986,000	24,692,000
Venezuela	42,885,000	18,049,000
Colombia	10,611,000	6,887,000
Other countries	3,294,000	2,545,000
Totals	72,776,000	52,173,000

In addition to the heavy runs of South American crude, Eastern refineries were running largely on West Texas oil.

Venezuelan Output

Venezuela has forged rapidly to the front as a leading factor in the world

World Production of Crude Petroleum

	1928[1]		1927[2]		1857 to 1927[2]	
	Barrels of 42 U. S. gallons.	Percent of total.	Barrels of 42 U. S. gallons.	Percent of total.	Barrels of 42 U. S. gallons.	Percent of total.
United States	896,000,000	68.3	901,129,000	71.5	10,341,675,000	65.32
Venezuela	108,000,000	8.2	63,134,000	5.0	137,656,000	0.87
Russia[3]	91,850,000	7.0	77,458,000	6.1	2,247,625,000	14.20
Mexico	49,250,000	3.8	64,121,000	5.1	1,471,338,000	9.29
Persia	40,000,000	3.1	39,688,000	3.1	261,187,000	1.65
Roumania	29,500,000	2.3	26,368,000	2.1	274,174,000	1.73
Dutch East Indies	26,500,000	2.0	25,967,000	2.1	362,662,000	2.29
Colombia	20,000,000	1.5	15,002,000	1.2	23,645,000	0.15
Peru	11,000,000	0.8	10,135,000	0.8	82,227,000	0.52
Argentina	9,250,000	0.7	8,630,000	0.7	43,238,000	0.27
British India	8,200,000	0.6	7,878,000	0.6	181,445,000	1.15
Trinidad	5,850,000	0.4	5,712,000	0.5	28,641,000	0.24
Poland	5,250,000	0.4	5,342,000	0.4	207,779,000	1.31
British Borneo	5,250,000	0.4	4,943,000	0.4	30,647,000	0.19
Japan and Taiwan	1,920,000	0.2	1,700,000	0.1	54,819,000	0.35
Egypt	1,250,000	0.1	1,267,000	0.1	15,439,000	0.10
Germany	700,000		663,000		18,596,000	0.11
Ecuador	600,000		537,000		[4]	[4]
France	580,000		504,000		4,208,000	[4]
Canada	560,000		477,000		26,737,000	0.17
Czechoslovakia	150,000		149,000		937,000	[4]
Italy	[4]	0.2	54,000	0.2	1,358,000	[4]
Algeria	[4]		8,000		100,000	[4]
Barbados	[4]		[4]		[4]	[4]
Cuba	[4]		3,000		[4]	[4]
England	[4]		2,000		19,000	[4]
Other countries	[5]250,000		[5]212,000		1,955,000	0.09
Totals	1,311,910,000	100.0	1,261,083,000	100.0	15,832,115,000	100.00

[1] Estimated by Oil, Paint and Drug Reporter.
[2] Records of United States Bureau of Mines.
[3] Includes Sakhalin.
[4] Included under "Other Countries."
[5] Includes Iraq.

oil position during 1928. Total production for the year, estimated at 108,000,000 barrels, shows an increase of approximately 43,500,000 barrels over output for the previous year, and puts Venezuela second only to the United States as a world producer, Russia thereby moving into third place in the list.

While there has been considerable agitation during the past year toward the establishment of some sort of a curtailment program in Venezuela, leading interests operating in that country as yet have been unable to reach any agreement on the question. Production continues to set new high records from month to month, and development work in the fields is virtually unchecked. Production for Venezuela during December aggregated 12,269,931 barrels, with considerable potential production shut-in by operators in some sections of the country.

With the development of Venezuela production there has also been a further expansion of operations in other South and Central American countries. O'Shaughnessy's South American Oil Reports estimates 1928 production in South America as follows:—

	Barrels.
Venezuela	108,098,508
Colombia	19,852,000
Peru	12,200,000
Argentina	8,750,000
Trinidad	5,500,000
Ecuador	1,100,000

Unfavorable legislation retarded development work by American companies in Columbia and Argentina, but an early solution of the Columbian problem is anticipated, and it is probable that output in that country will be considerably swelled by 1929 operations. While a large part of Venezuelan production has been moved to the Atlantic and Gulf refining centers during 1928, considerable quantities of this oil will be refined on the Island of Aruba, D. W. I., this year, a large American company now being engaged in building a refinery with capacity for handling more than 100,000 barrels of crude daily.

Conservation

The American petroleum industry made considerable progress in extending its conservation program during 1928, but, notwithstanding this work, overproduction of crude in domestic fields continued. There was a growing sentiment among operators toward the close of the year in favor of legislation by producing States to enforce a general policy of conservation in oilfield operations, although leaders in the industry were endeavoring to formulate some general plan of operation whereby control of the situation would remain in the hands of operators.

Operators in the Seminole area of Oklahoma guided their operations for the year largely by co-operative effort, and in consequence the development of this field was held back materially. This action, it was believed, was instrumental in creating a fairly stable condition in the market for high-gravity crude oil during the year. There is still considerable potential new production in the Seminole area, however, and efforts are now being made for an extension of the curtailment program through 1929.

Success also attended the efforts of operators in the Panhandle section of Texas to hold down their operations. The Winkler and Pecos county pools in that State together showed a potential production of more than 6,000,000 barrels daily at the close of the year, although under the terms of the prorating plan in effect in that area combined production of the two fields averaged approximately 239,000 barrels daily at the close of the year.

California production showed a sharp spurt toward the year end, and strenuous efforts were being made by leaders in the Pacific Coast area to strengthen the curtailment program. Prices for heavy crude in California were cut during the year to discourage drilling operations in the heavy oil area.

Petroleum Market Trend

Crude oil prices were weak during the first half of 1928, but the market showed a strong recovery about midyear with a general upward movement, average prices during the closing half being higher than those for the last six months of 1927. Pennsylvania crude in particular was strong, showing six advances during the year. Owing to the extremely heavy demand for Pennsylvania crude because of its lubricating oil content, however, the posted schedule in that State had lost its normal relation to the other principal producing areas of the country insofar as price was concerned.

Gasoline prices at refineries showed improvement during the second quarter of 1928 and continued on the upward move until late in the closing quarter, averaging substantially above those in effect during the similar periods in 1927. Heavy export buying combined with a material gain in domestic consumption accounted for the improved market position.

Filling station prices closely followed the trend in the wholesale market and were over 1927 levels during the greater part of 1928.

The trend of prices over 1928, with comparison for the corresponding dates in 1927, is illustrated by the quarterly averages, which follow:—

	Average of typical markets									
	January 1—		April 1—		July 1—		October 1—		December 31—	
	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.
Crude petroleum at wells, per barrel	$1.457	$1.954	$1.437	$1.535	$1.502	$1.422	$1.599	$1.341	$1.74	$1.457
Gasoline at refineries, per gallon	.0706	.109375	.0775	.0831	.0944	.08156	.1066	.0756	.09	.0706
Gasoline at filling stations, per gallon	.1804	.2172	.1855	.2047	.1967	.1927	.2067	.1845	.1997	.1804

Refinery Products

Marked improvement in refinery products, with the exception of fuel oils, developed last year. Consumption was showing steady expansion, notably on gasoline and paraffin waxes, and prices also averaged well over those of the previous year in many instances.

Domestic demand for gasoline, lubricating oils, and waxes was larger last year than in the preceding year, and export movement of the same products also showed material improvement.

Fuel oil stocks showed considerable accumulation during the year, and prices were lower. Diesel oil also sold off somewhat during the year, although the market for this product was in much stronger position than other fuel oils. Lubricating oil prices showed substantial advances during the closing quarter of 1928, while kerosene held fairly steady throughout the year. Export volume on kerosene was curtailed somewhat as a result of the sharp competition from Russian oil in many important consuming markets. Paraffin sales in export markets were running into exceptionally heavy totals, 365,020,000 pounds being shipped abroad during the first 11 months of 1928, as compared with exports of 309,754,000 pounds in the corresponding period of 1927. Domestic demand showed an increase of approximately 27,500,000 pounds during the same period.

During the latter part of the year leaders in the refining branch of the trade were urging the industry to utilize cracking equipment to a greater extent, in order to continue maximum production of gasoline and other light products, with a minimum output of heavy fuel oil.

Gasoline Tankwagon Markets

Marketing conditions showed considerable improvement in this branch of the industry during 1928. Early in the year principal marketers in various sections of the country eliminated many of their previous selling policies, including preferential discounts, secret rebate contracts, free pumps and other station equipment, etc. This was followed later in the year by the formulation and adoption of a code of ethics governing marketing operations, under the supervision of the American Petroleum Institute.

Gasoline and kerosene prices were generally well maintained in tankwagon markets last year. Price cutting was less prevalent than for many years past, and "price wars" were of infrequent occurrence; whereas during the several preceding years the country had been virtually honeycombed with local price disturbances during the height of the summer motoring season.

On the whole, tankwagon quotations in 1928 showed considerable more stability than was true of the previous year, and as a rule did not fluctuate as rapidly or as frequently as was the case with the wholesale markets at refining centers.

A feature of tankwagon marketing operations last year was the material progress made by refiners in developing consumption of their premium grades of gasoline—high tests and "doped" blends. In some sections of the East it was reported that the sales of these special motor fuels comprises between 25 and 30 percent of the aggregate gallonage of leading refiners for the entire year.

Ethyl gasoline made its appearance in New York City during the year, the Board of Health removing the ban against the sale of this product.

Another development of general interest to the trade in this city was the modification of fire department regulations, permitting the transporting of gasoline through the city in tank trucks. For a number of years previously, tankwagons had been prohibited in this market and all gasoline deliveries were made in steel barrels.

Gasoline and Naphtha

Gasoline markets showed a strong recovery in 1928, and prices averaged well above those prevailing in 1927. While it was a buyers' market during the early months of the year, the situation underwent a market change toward the close of the first quarter, and prices started on an upward move which carried U. S. Motor at Group 3 refineries from a low of 5½c. a gallon in January to a peak of 9⅜c. per gallon in September. Domestic consumption showed market gains during the year, establishing a new high record for all time, while export shipments also broke all previous records. During the summer and fall months of the year refiners were forced to draw heavily on their reserve holdings of gasoline to take care of their business.

California shipped large quantities of gasoline to the Eastern seabord during the year, but Atlantic coast markets readily absorbed these supplies with no disturbance to the market position here. In fact, during the height of the summer season, California U. S. Motor gasoline was selling in Eastern markets at ¼c. to ½c. per gallon over the quotations ruling on gasoline from other sections, due to the anti-knock qualities claimed for the Pacific Coast motor fuel.

Details of supply, demand, and stocks in the first 11 months of the past year, as gathered by the Bureau of Mines, follow:—

	Barrels		
	Production.	Stocks end of period.	Domestic demand.
January	27,879,000	36,112,000	20,959,000
February	26,775,000	38,782,000	21,136,000
March	29,245,000	40,229,000	24,041,000
April	29,332,000	40,210,000	25,712,000
May	30,825,000	37,336,000	27,355,000
June	30,675,000	34,393,000	29,022,000
July	32,884,000	30,392,000	31,985,000
August	34,037,000	27,197,000	33,148,000
September	33,543,000	26,405,000	29,691,000
October	34,319,000	26,453,000	30,610,000
November	33,218,000	29,075,000	26,222,000
December	33,907,000	33,066,000	26,644,000

Kerosene

Prices in this market moved within narrower ranges last year than was the case in 1927, and demand showed considerable improvement, both in domestic and export markets. Export business recorded substantial gains during the year, notwithstanding rather intense competition from Russia in some of the markets formerly supplied almost entirely by American refiners. Pennsylvania prices of the year ranged from a low of 6½c. per gallon on 45 water white to a high of 8c. per gallon on the same grade, as contrasted with 5c. and 8⅝c., respectively, in the previous year. In the Oklahoma market, the high and low for the year on 41-43 water white was 6⅜c. and 4c. per gallon, respectively, as compared with 6¼c. and 3⅞c. in 1927. A feature of the market in 1928 was the utilization of considerable quantities of kerosene distillate as furnace oil, demand for the latter product breaking all previous records.

Details of production, demand, and stocks for the first 11 months of 1928, as gathered by the Bureau of Mines, follow:—

	Barrels		
	Production.	Stocks end of period.	Domestic demand.
January	5,047,000	7,670,000	2,742,000
February	4,783,000	7,692,000	3,221,000
March	4,717,000	7,826,000	2,737,000
April	5,033,000	7,733,000	3,234,000
May	5,243,000	7,537,000	3,383,000
June	4,849,000	8,370,000	2,385,000
July	4,994,000	8,470,000	3,079,000
August	5,389,000	8,922,000	3,261,000
September	5,037,000	8,593,000	3,276,000
October	5,186,000	8,614,000	3,465,000
November	4,908,000	8,884,000	2,547,000
December	4,968,000	9,001,000	3,632,000

Fuel and Gas Oils

Heavy overproduction of fuel oil made for an easy market during 1928, a net decline of 30c. per barrel in the quotation for bunker "C" being shown in this market. Quotations in principal refinery centers showed a corresponding downward trend. With heavy shipments of West Texas and Venezuelan crudes reached Atlantic Coast refineries, there was an unusually large outrun of low grade fuel oil in this area. Record demand for furnace oil during the winter selling season aided refiners in cutting down their surplus stocks somewhat, but at the close of the year refinery holdings were still top heavy at all principal refining centers. Gas oil was in good demand throughout the year, notably during the summer months, when straight-run stock was wanted for cracking operations. Notwithstanding this demand, however, gas oil prices during 1928 averaged considerably under those of the previous year. Diesel oil was in fairly active demand throughout the entire year, the market showing a drop of 10c. a barrel to $2.00, bulk, f.o.b. Bayonne, during the early part of the year, and holding at that level thereafter, notwithstanding several cuts in the price for bunker "C."

Details of production and stocks for the first 11 months of the past year, as gathered by the Bureau of Mines, follow:—

	Barrels	
	Production.	Stocks end of month.
January	32,271,000	123,960,000
February	30,944,000	123,808,000
March	34,071,000	123,654,000
April	33,857,000	123,800,000
May	35,620,000	126,828,000
June	35,505,000	130,249,000
July	36,941,000	133,073,000
August	37,449,000	134,818,000
September	37,050,000	136,630,000
October	37,007,000	136,723,000
November	35,721,000	136,503,000
December	37,293,000	134,901,000

Above figures on stocks on hand include California heavy oil holdings.

Paraffin Waxes

Substantial appreciation in selling prices, together with a marked increase in both domestic and export sales, featured the wax market last year. Refiners were curtailing production somewhat during the early part of the year, but were speeding up operations during the closing quarter. Reserve holdings of wax at refinery centers were materially depleted by the exceptionally heavy demand which ruled throughout the year. Prices for white crude scale, 122-124 a.m.p. at Pennsylvania refineries showed a range of from 2⅞c., the low point of the year, to 5½c. a pound, the top for 1928, as compared with 2⅝c. to 4⅞c. per pound, respectively, in 1927. Oklahoma refinery quotations on the same grade ranged from 2⅛c. to 5c. per pound, as contrasted with 2⅝c. to 4¼c. per pound during the previous year.

Details of production, demand, and stocks for the first 11 months of the past year, as gathered by the Bureau of Mines, follow:—

	Pounds		
	Production.	Stocks end of period.	Domestic demand.
January	55,320,000	168,900,000	15,069,600
February	49,068,000	166,244,000	15,025,000
March	50,207,000	136,465,000	41,606,600
April	37,548,000	110,010,000	37,212,600
May	51,072,000	103,639,000	24,472,000
June	50,792,000	91,989,000	30,583,000
July	45,273,000	84,476,000	19,722,000
August	54,084,000	79,136,000	30,771,000
September	50,670,000	84,330,000	20,980,000
October	54,546,000	71,789,000	22,736,000
November	56,665,000	103,949,000	22,329,000
December	54,685,000	110,344,000	23,825,000

Lubricating Oils

A marked strengthening in the position of cylinder stocks at Pennsylvania refineries featured last year's lubricating oil market. Under the stimulus of a heavy export buying movement prices showed a strong upward surge and were more than double the January 1 price by the end of December in some instances. Neutral oils did not share in this phenomenal advance and were slightly lower for the year. Increasing production costs in the East, due to the several advances in price for Pennsylvania crudes, accounted in part for the heavy gain in cylinder oil prices, although a slight falling off in production of wanted grades and material gains in consumption were the principal factors in bringing about the advances.

Details of production, demand and stocks for the first eleven months of the past year, as gathered by the Bureau of Mines, follow:—

	Barrels		
	Production.	Stocks end of month.	Domestic demand.
January	2,658,000	7,978,000	1,600,000
February	2,728,000	8,332,000	1,533,000
March	2,905,000	8,412,000	1,988,000
April	3,026,000	8,018,000	2,362,000
May	3,091,000	8,060,000	1,989,000
June	3,009,000	7,832,000	2,143,000
July	2,827,000	7,667,000	1,930,000
August	2,891,000	7,711,000	2,035,000
September	2,833,000	7,764,000	1,973,000
October	2,979,000	7,830,000	2,145,000
November	2,748,000	7,921,000	1,763,000
December	2,993,000	8,340,000	1,699,000

Export Markets

Foreign demand for the principal refinery products showed marked expansion in 1928. Great Britain in particular was a heavy buyer of American gasoline, kerosene, lubricating oils and waxes. Prices prevailing on these products in American markets were so low during the greater part of the year that British and other European oil companies found it more profitable to buy the refined products in the United States than to import crude petroleum and refine it at home. During the greater part of 1928 the refining capacity of Great Britain was utilized only to a small extent as a result of this situation.

Prices on principal refined products were lower last year than in 1927. During the great part of the year Gulf operators were in position to undersell refiners at the North Atlantic on both gasoline and kerosene, and a large part of the bulk shipments of these products was moved out of the Gulf. The North Atlantic, however, continued to hold its lead in the marketing of cased kerosene and gasoline.

California was an increasingly important factor in the export gasoline situation during 1928. Considerable European business normally placed at the Gulf or the North Atlantic was diverted to the Pacific Coast by the low prices which California refiners were able to quote on some inquiries. In addition, considerable quantities of California gasoline were shipped to Europe for blending into anti-knock fuels, the Pacific Coast product being peculiarly adaptable to such mixtures.

The Export Corporation

A revolutionary change in petroleum export operations is indicated by the incorporation of the Export Petroleum Association, Inc. This organization, which at the outset is made up of fifteen of the largest producing and refining companies in the United States, was not incorporated until early in 1929, although conceived during the closing quarter of 1928. The co-operative export group, formed under the

provisions of the Webb act, permitting industries to organize for export trade, is similar to the export bodies which have been previously organized by the steel, zinc, copper, phosphate, sulphur, wood and other industries.

Under the plan of operation of the export association, producers and refiners in the United States will all be represented in the Export Petroleum Association, Inc., when that body actually starts functioning. Prices on refined products for shipments to foreign markets will be fixed, orders received by the association and pro-rated among its members, and shipments made from refinery terminals nearest to the point of destination. This plan, it is felt, will not only eliminate many of the more uneconomic phases of oil exporting, such as long hauls, excessive price cutting on foreign business, etc., but will also enable American producers and refiners to obtain a better net return on all of their products sold abroad.

British oil interests late in 1928 organized a working agreement closely akin to that which the American industry has worked out. The British group includes Royal Dutch-Shell, Anglo-Persian and Burmah Oil, and provides for co-operative marketing activities in export trade.

With completion of these two organizations, the American and British oil trades are now more formidably organized to meet the growing competition which Russia has been affording in world markets during the past few years.

Crude Petroleum: Price Changes: 1928-1927

Cabell, W. Va.

	1928.	1927.
January 1	$1.50	$2.10
February 9	1.35	2.10
June 13	1.45	1.40

Corning, Ohio

	1928.	1927.
January 1	$1.55	$2.25
June 29	1.70	1.45
August 8	1.80	1.45
December 17	1.90	1.45

Lima, Ohio

	1928.	1927.
January 1	$1.71	$2.21
February 10	1.55	2.21
July 26	1.69	1.71

Pennsylvania
(Bradford Oil in National Transit Lines)

	1928.	1927.
January 1	$2.80	$3.15
June 13	3.05	2.90
July 9	3.20	2.90
September 14	3.35	2.65
October 13	3.45	2.65
November 8	3.60	2.65
December 14	3.85	2.65

Pennsylvania
(Other Oil in National Transit Lines)

	1928.	1927.
January 1	$2.65	$3.05
June 13	2.90	2.80
July 9	3.10	2.80
Setember 14	3.25	2.55
October 13	3.35	2.55
November 8	3.50	2.55
December 14	3.75	2.55

Wooster, Ohio

	1928.	1927.
January 1	$1.57	$2.25
July 26	1.67	1.57
October 13	1.77	1.57

Illinois

	1928.	1927.
January 1	$1.77	$2.10
February 23	1.50	1.90
July 26	1.55	1.77

Indiana

	1928.	1927.
January 1	$1.47	$1.98
February 10	1.32	1.98
July 26	1.37	1.47

Plymouth, Ill.

	1928.	1927.
January 1	$1.33	$1.63
February 23	1.23	1.43
July 26	1.28	1.33

Princeton, Ind.

	1928.	1927.
January 1	$1.60	$2.10
February 23	1.50	1.90
July 26	1.55	1.60

Waterloo, Ind.

	1928.	1927.
January 1	$1.35	$1.35

Oklahoma-Kansas, North, East, and Central Texas

	1928.	1927.
January 1	$1.10 @1.60	$1.30 @2.70
February 16	.75 @1.60	1.35 @2.70
February 21	.76 @1.76	1.30 @2.31
July 26	.60 @2.16	1.05 @1.62

Ragland

	1928.	1927.
January 1	$0.95	$0.95

Somerset

	1928.	1927.
January 1	$1.60	$2.20 @2.35
February 9	1.45	2.20 @2.35
June 13	1.55	1.50
July 30	1.70	1.50
September 14	1.75	1.50

Gulf Coast "A"

	1928.	1927.
January 1	$1.20	$1.40

Gulf Coast "B"

	1928.	1927.
January 1	$1.15 @1.37	$1.40 @2.20

California
(Signal Hill, Huntington Beach, Inglewood, Olinda-Brea Canyon, Rosecrans, Dominguez, Torrance and Richfield)

	1928.	1927.
January 1	$0.85 @1.09	$0.85 @1.84
August 16	.85 @1.35	.85 @1.06

California
(Whittier and La Habra)

	1928.	1927.
January 1	$0.85 @0.91	$0.85 @1.25
August 16	.85 @ .92	.85 @ —

California
(Coyote Hills)

	1928.	1927.
January 1	$0.85 @0.95	$0.85 @1.62
August 16	.85 @1.20	.85 @ .95

California
(Santa Fe Springs

	1928.	1927.
January 1	$0.85 @1.15	$1.02 @2.44
August 16	.85 @1.45	.85 @1.15

California
(Kern River, McKittrick and Newhall)

	1928.	1927.
January 1	$0.75 @1.11	$0.75 @2.21
August 16	.75 @ —	.75 @ —
October 3	*.45 @ .65	.75 @ —
October 20	*.45 @ .50	.75 @ —

* Kern River field only.

California
(Midway, Sunset, Elk Hills, Lost Hills)

	1928.	1927.
January 1	$0.75 @1.11	$0.75 @2.21
August 16	.75 @1.40	.75 @1.08

California
(Wheeler Ridge and Coalinga)

	1928.	1927.
January 1	$0.75 @0.99	$0.75 @1.84
August 16	.75 @1.30	.75 @ .99

Bellevue

	1928.	1927.
January 1	$1.25	$1.40
February 21	1.20	1.25

Bull Bayou, Caddo, Haynesville, El Dorado, Homer, Crichton and De Soto

	1928.	1927.
January 1	$1.10 @1.60	$1.40 @2.70
February 21	.81 @1.76	1.25 @2.27
July 30	.81 @1.75	1.10 @1.60

Cotton Valley

	1928.	1927.
January 1	$0.85	$1.20
February 6	.75	1.20
April 11	.75 @1.75	1.00
July 30	.81 @1.76	1.00

Smackover
(Below 24 Degrees)

	1928.	1927.
January 1	$0.85	$1.10
February 6	.75	1.10

Smackover
(28 Degrees and Above)

	1928.	1927.
January 1	$1.00	$1.50
February 6	.90	1.50

Big Muddy

	1928.	1927.
January 1	$1.25	$1.85
July 27	1.33	1.25

Cat Creek

	1928.	1927.
January 1	$1.33	$2.00

Elk Basin

	1928.	1927.
January 1	$1.33	$2.00
July 27	1.48	1.33

Greybull

	1928.	1927.
January 1	$1.33	$2.15

Hamilton Dome

	1928.	1927.
January 1	$0.85	$1.35

Kevin

	1928.	1927.
January 1	$1.20	$1.20

Lance Creek

	1928.	1927.
January 1	$1.33	$2.00
July 27	1.48	1.33

Osage

	1928.	1927.
January 1	$1.33	$2.00

Rock Creek

	1928.	1927.
January 1	$1.25	$1.85
July 27	1.33	1.30

Salt Creek
(29 Degrees to 29.9 Degrees)

	1928.	1927.
January 1	$1.14	$1.35
February 21	1.01	1.38
July 27	.95	1.14

Salt Creek
(36 Degrees to 36.9 Degrees)

	1928.	1927.
January 1	$1.28	$1.55
February 21	1.34	1.66
July 27	1.36	1.28

Sunburst

	1928.	1927.
January 1	$1.35	$1.25
January 25	1.50	1.25
May 8	1.65	1.50

Torchlight

	1928.	1927.
January 1	$1.35	$2.15

Oil Springs, Canada

	1928.	1927.
January 1	$2.18	$2.61
February 10	2.02	2.61

Petrolia, Canada

	1928.	1927.
January 1	$2.11	$2.68
February 10	1.95	2.63

Tuxpam, Mexico

	1928.	1927.
January 1	$0.92	$1.35

Panuco, Mexico

	1928.	1927.
January 1	$1.10	$1.16

(Tankcar Quotations at Refinery)

Refinery Products: Record of Prices

Gasoline and Naphtha

Pennsylvania
54 Gravity, Naphtha

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11⅜	$0.11¼	$0.08	$0.07½
February	.11¾	.11¼	.08	.07½
March	.11½	.09¾	.08¼	.07¾
April	.09⅝	.08½	.08⅝	.08
May	.09¼	.09	.09¼	.09
June	.09¼	.09	.10	.09¼
July	.09¼	.09	.10¼	.10¼
August	.09	.08½	.10¾	.10¼
September	.08⅝	.08¼	.11½	.11½
October	.08¼	.08¼	.11½	.10¾
November	.08	.07¾	.10⅝	.10¾
December	.07⅝	.07¾	.10⅜	.10¼
Year	.11¾	.07¾	.11½	.07½

60 Gravity, S. R. Gasoline

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13¼	$0.12¾	$0.08⅜	$0.08½
February	.13	.12¼	.08⅜	.08½
March	.12¾	.10⅜	.08⅜	.08½
April	.10½	.10	.09⅛	.08½
May	.10¾	.09⅜	.10½	.10
June	.10	.09⅜	.11¼	.10⅜
July	.10	.09⅜	.11½	.11¼
August	.10	.09	.11½	.11½
September	.09¼	.09	.12½	.12½
October	.09	.09	.12½	.11½
November	.08½	.08½	.11½	.11½
December	.08½	.08½	.11½	.11¼
Year	.13¼	.08½	.12½	.08½

62 Gravity, S. R. Gasoline

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.14¼	$0.13⅜	$0.09⅛	$0.08⅜
February	.14	.13½	.09	.08⅜
March	.13¾	.11⅝	.09¼	.09
April	.11½	.11	.09⅜	.09¼
May	.11⅜	.10½	.10½	.10
June	.10⅜	.10½	.11¾	.10⅜
July	.10⅜	.10½	.11⅜	.11½
August	.10⅜	.09¾	.11⅜	.11⅜
September	.10¼	.09¾	.13	.13
October	.10	.10	.13	.12¼
November	.09¼	.09¼	.12¼	.12¼
December	.09¾	.09¼	.12¼	.11⅜
Year	.14¼	.09⅛	.13	.08⅜

Oklahoma
50@52, 450 End Point, Naphtha

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09¼	$0.09	$0.05½	$0.05½
February	.09	.08⅝	.05½	.05⅜
March	.07¾	.06	.05½	.05½
April	.06¼	.06	.06⅜	.05½
May	.06⅛	.06	.07	.06⅜
June	.06⅛	.06	.07¼	.07
July	.06¼	.06⅛	.08¼	.07¼
August	.06¼	.06	.08½	.08¼
September	.06¼	.06	.08⅜	.09
October	.06	.06	.09	.09
November	.06	.06	.09	.08½
December	.06	.05⅝	.08½	.07¼
Year	.09¼	.05¾	.09¼	.05½

50@60, 437 End Point Gasoline
(U. S. Motor)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09⅜	$0.06⅜	$0.05⅜	$0.05½
February	.09	.07⅜	.06	.05⅜
March	.07⅜	.06	.06¼	.06
April	.06⅝	.06	.06⅜	.06⅜
May	.06⅜	.06⅛	.07⅜	.07
June	.06⅜	.06½	.07⅝	.07¼
July	.07⅛	.06⅝	.08⅝	.07⅝
August	.07⅛	.06	.09¼	.09
September	.06⅝	.06⅛	.09⅜	.09
October	.06¼	.06	.09¼	.08½
November	.06	.06	.09	.08¼
December	.06	.05⅜	.08	.07½
Year	.09⅜	.05⅞	.09⅜	.05½

60@62, 400 End Point, Gasoline

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.10¼	$0.10	$0.06¼	$0.06¼
February	.10	.09	.06½	.06⅜
March	.08⅝	.06⅜	.06½	.06⅜
April	.07	.06⅝	.06⅞	.06¼
May	.07	.06⅝	.07½	.07¼
June	.07	.06⅜	.07⅜	.07⅜
July	.07⅛	.07	.09¼	.08
August	.07⅛	.06¼	.09⅝	.09⅝
September	.06¼	.06⅛	.10¼	.09⅜
October	.06½	.06½	.09⅝	.09⅜
November	.06¼	.06⅛	.09⅝	.09⅜
December	.06½	.06⅜	.09¼	.08¼
Year	.10¼	.06¼	.10⅛	.06¼

North Texas
56@58, 450 End Point, Naphtha

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08¾	$0.08⅜	$0.05½	$0.05½
February	.08⅝	.08	.05¼	.05½
March	.07¼	.05¾	.05¼	.05½
April	.06¼	.06	.06⅜	.05½
May	.06¼	.06	.07	.06¼
June	.06¼	.06	.07⅜	.07
July	.06¼	.06	.08½	.07⅜
August	.06¼	.06	.09¼	.08⅜
September	.06¼	.06	.09¼	.09¼
October	.06	.06	.09¼	.09
November	.06	.06	.09	.08¼
December	.06	.05¾	.08¼	.07¼
Year	.08¾	.05⅜	.09¼	.05½

58@60, 437 End Point, Gasoline
(U. S. Motor)

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.08⅜	$0.05⅝	$0.05½
February	.09	.08	.06	.05⅝
March	.07⅜	.06	.06¼	.06
April	.06⅝	.06	.07	.06⅜
May	.06⅝	.06¼	.07⅜	.07
June	.06⅝	.06¼	.07⅝	.07¼
July	.06⅝	.06½	.08⅝	.07⅝
August	.06⅞	.06	.09⅜	.09
September	.06¼	.06¼	.09⅝	.09¼
October	.06¼	.06	.09¼	.09
November	.06	.06	.09	.08¼
December	.06	.05⅞	.08	.07¼
Year	.09½	.05⅞	.09⅝	.05½

Kerosene

Pennsylvania
45, Water White

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08⅝	$0.08¼	$0.06⅜	$0.06¼
February	.08⅜	.07⅞	.06¼	.06¼
March	.07¾	.06⅜	.06¾	.06¼
April	.07	.06⅜	.06¼	.06¼
May	.07	.06⅜	.06⅜	.06¼
June	.07	.06¼	.06¾	.06⅜
July	.06¼	.06¼	.06⅝	.06¼
August	.06¼	.06	.06¼	.06¼
September	.06¼	.05	.08	.07¼
October	.06¾	.06¼	.08	.07¾
November	.06⅜	.06¼	.07¼	.07¼
December	.06	.05¼	.07⅜	.07¼
Year	.08⅝	.05	.08	.06¼

47, Water White

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09⅝	$0.09¼	$0.07	$0.06⅞
February	.09½	.08⅜	.07	.07
March	.09	.08	.07	.07
April	.08¼	.08	.07¼	.07
May	.08¼	.07¼	.07¼	.07¼
June	.08	.07¼	.07⅝	.07½
July	.07⅝	.07¼	.07½	.07
August	.07¼	.07	.07¼	.07
September	.07¼	.07	.08⅜	.08¼
October	.07⅜	.07	.08⅜	.08⅜
November	.07⅜	.07	.08¼	.08¼
December	.07	.06¾	.08¾	.08¼
Year	.09⅝	.06⅞	.08⅝	.06⅞

Oklahoma
41@43, Water White

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06¼	$0.05⅜	$0.04¼	$0.04
February	.06¼	.05⅜	.04	.04
March	.06	.05¼	.04¼	.04
April	.06	.04¼	.04⅜	.04⅜
May	.04⅝	.04	.05¼	.05
June	.04⅝	.03½	.05¼	.04⅝
July	.04	.03½	.05	.04¼
August	.04¼	.03½	.06¾	.05¼
September	.04⅜	.04	.06⅝	.06¼
October	.04⅝	.04¼	.06⅜	.05⅜
November	.04⅝	.04½	.05⅝	.05¼
December	.04⅜	.04¼	.05⅜	.05¼
Year	.06¼	.03½	.06⅜	.04

North Texas
41@43, Water White

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06¼	$0.05⅜	$0.04¼	$0.04
February	.06¼	.05⅜	.04	.04
March	.06	.04½	.04¼	.04
April	.04⅝	.04	.04⅜	.04⅛
May	.04½	.03⅞	.05	.05
June	.04⅛	.03⅜	.04⅞	.04⅛
July	.04	.03⅜	.05	.04⅜
August	.04	.03⅜	.06¼	.05¼
September	.04⅜	.04	.06⅜	.06
October	.04⅝	.04¼	.05⅝	.05⅜
November	.04⅝	.04½	.05⅝	.05¼
December	.04⅜	.04¼	.05⅜	.05¼
Year	.06¼	.03⅜	.06⅜	.04

Fuel and Gas Oils

Pennsylvania

36@40, Fuel Oil

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.06⅝	$0.06½	$0.04⅝	$0.04⅝
February	.06⅝	.06¼	.04⅝	.04⅝
March	.06⅜	.06¼	.05	.04⅝
April	.06⅜	.05½	.05	.05
May	.05¾	.05	.05	.05
June	.05¼	.04⅜	.05¼	.05
July	.04⅜	.04⅝	.05	.05
August	.04⅝	.04½	.05	.04⅝
September	.04⅝	.04½	.04⅞	.04⅜
October	.04⅝	.04⅝	.04⅜	.04⅝
November	.04⅜	.04⅜	.04⅜	.04⅜
December	.04⅜	.04⅜	.05	.04⅜
Year	.06⅜	.04⅜	.05¼	.04⅝

Oklahoma

22@26, Fuel Oil

Per barrel

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.25	$1.20	$0.75	$0.72½
February	1.22½	1.20	.87½	.77½
March	1.22½	1.12½	.87½	.85
April	1.15	.95	.82½	.82½
May	.97½	.90	.75	.75
June	.90	.90	.75	.62½
July	.90	.90	.62½	.57½
August	.90	.82½	.57½	.57½
September	.80	.80	.60	.60
October	.80	.80	.60	.60
November	.80	.80	.60	.55
December	.72½	.72½	.55	.55
Year	1.25	.72½	.87½	.55

32@36, Gas Oil

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04⅝	$0.04¼	$0.02½	$0.02¼
February	.04⅜	.04¼	.02½	.02½
March	.04¼	.03⅜	.02½	.02½
April	.03¼	.02½	.02½	.02½
May	.03	.02½	.02½	.02½
June	.03	.02⅜	.02½	.02⅜
July	.02⅞	.02⅜	.02⅜	.02⅜
August	.02⅞	.02⅜	.02⅜	.02⅜
September	.02⅝	.02⅜	.02⅜	.02⅜
October	.02½	.02½	.02⅜	.02⅜
November	.02½	.02¾	.02⅝	.02⅝
December	.02¾	.02¼	.02½	.02⅝
Year	.04⅜	.02¼	.09⅜	.02¼

North Texas

24@26, Fuel Oil

Per barrel

	1927. H.	1927. L.	1928. H.	1928. L.
January	$1.50	$1.47½	$0.70	$0.67½
February	1.60	1.47½	.72½	.67½
March	1.60	1.25	.72½	.72½
April	1.20	1.05	.72½	.72½
May	1.10	1.05	.70	.70
June	1.10	.85	.70	.60
July	.90	.85	.60	.60
August	.90	.80	.60	.60
September	.85	.80	.60	.60
October	.80	.80	.60	.60
November	.80	.80	.60	.55
December	.77½	.77½	.55	.55
Year	1.60	.77½	.72½	.55

32@36, Gas Oil

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04⅝	$0.04¼	$0.02⅝	$0.02¼
February	.04⅜	.04	.02⅝	.02⅝
March	.04	.03¼	.02⅝	.02⅝
April	.03⅝	.02½	.02⅝	.02⅝
May	.02⅜	.02½	.02½	.02⅝
June	.02⅜	.02½	.02¼	.02¼
July	.02⅜	.02½	.02¼	.02¼
August	.02⅜	.02¼	.02¼	.02¼
September	.02⅜	.02¼	.02¼	.02¼
October	.02½	.02½	.02½	.02⅛
November	.02½	.02¼	.02⅜	.02⅛
December	.02¼	.02¼	.02⅜	.02⅜
Year	.04⅜	.02¼	.02½	.02¼

Lubricating Oils

Pennsylvania

Neutral Oil

200 Vis., No. 3 Color

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.30½	$0.29½	$0.33¼	$0.33
February	.33	.32½	.33¼	.32
March	.32½	.31½	.33¼	.32
April	.33½	.31½	.33¼	.33¼
May	.34	.33	.33¼	.33¼
June	.34¼	.34	.33¼	.33¼
July	.35	.34½	.33¼	.33¼
August	.35	.34	.33¼	.31
September	.34½	.34¼	.33	.31½
October	.34¼	.34	.31½	.30
November	.33¼	.32½	.29½	.29
December	.32½	.32½	.29	.29
Year	.35	.29½	.33¼	.29

Cylinder Stock

600, Steam Refined

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12	$0.11	$0.09⅜	$0.09¼
February	.12⅜	.12	.09¼	.09
March	.12½	.10⅜	.09	.09
April	.11	.10⅜	.09¼	.09¼
May	.11	.09	.09⅜	.09½
June	.09½	.09	.10½	.09⅜
July	.09	.08⅜	.11⅜	.11
August	.09	.08⅜	.12½	.12
September	.09½	.09	.13½	.13
October	.10	.09⅜	.13½	.13½
November	.10	.10	.15½	.14
December	.10	.10	.23¼	.15½
Year	.12½	.08⅜	.23¼	.09

South Texas

Neutral Oil

200 Vis., No. 3 Color

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12	$0.11	$0.09	$0.08½
February	.12	.11	.09	.09
March	.12	.11	.09	.08
April	.12	.10½	.08½	.08
May	.11½	.10½	.08½	.08½
June	.11½	.10¼	.10	.08½
July	.11	.10¼	.10	.10
August	.11	.09	.10¼	.10
September	.09½	.09	.10¼	.10¼
October	.09½	.09	.10¼	.10¼
November	.09½	.08½	.10¼	.10¼
December	.08½	.08½	.10¼	.10¼
Year	.12	.08½	.10¼	.08

Oklahoma

Neutral Oil

200 Vis., No. 3 Color

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11½	$0.11¼	$0.10⅜	$0.10⅜
February	.11½	.11½	.10⅜	.10⅜
March	.11½	.10⅜	.10⅜	.10⅜
April	.11	.10⅜	.10⅜	.10⅜
May	.11	.10⅜	.10⅜	.10⅜
June	.11	.10⅜	.10⅜	.10⅜
July	.11	.10⅜	.10⅜	.10⅜
August	.11	.10⅜	.10⅜	.10⅜
September	.11	.10⅜	.10⅜	.10⅜
October	.10⅜	.10⅜	.10⅜	.10⅜
November	.10⅜	.10⅜	.10⅜	.10⅜
December	.10⅜	.10⅜	.09½	.09½
Year	.11½	.10⅜	.10⅜	.09½

Paraffin Wax

Pennsylvania

122@124, White, Crude, Scale

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04⅞	$0.04½	$0.02⅞	$0.02⅞
February	.04⅝	.04½	.03¼	.03
March	.04⅝	.04	.03¼	.03⅛
April	.04	.03⅝	.03¼	.03⅛
May	.03⅝	.02⅜	.03¼	.03¼
June	.02⅜	.02⅝	.03¼	.03¼
July	.03⅛	.02⅞	.03⅜	.03⅜
August	.03⅛	.03	.04	.03⅜
September	.03¼	.03⅛	.05	.04
October	.03⅜	.03⅛	.05	.05
November	.03¼	.03¼	.05⅛	.05⅛
December	.03⅛	.03⅛	.05⅛	.05⅛
Year	.04⅞	.02⅝	.05⅛	.02⅞

Oklahoma

122@124, White, Crude, Scale

Per pound

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.04¼	$0.04¼	$0.02⅝	$0.02½
February	.04¼	.04¼	.02⅝	.02½
March	.04¼	.04	.02¾	.02⅝
April	.04¼	.03	.02⅞	.02⅜
May	.03⅛	.03	.03⅜	.02⅞
June	.03⅛	.03	.04	.03⅜
July	.03⅛	.03	.04	.04
August	.03⅛	.02⅞	.04	.04
September	.03	.02⅝	.04⅞	.04
October	.02⅝	.02⅝	.05	.05
November	.02⅝	.02⅝	.05	.05
December	.02⅝	.02⅝	.05	.04⅞
Year	.04¼	.02⅝	.05	.02½

Export Quotations

North Atlantic Ports

Gasoline and Naphtha

Navy Gasoline, Bulk

(58-60 deg., 437 endpoint)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12¼	$0.11¾	$0.08½	$0.08¼
February	.11¾	.11¾	.09½	.08½
March	.11¾	.10¼	.10	.09⅜
April	.10	.09⅝	.10	.09⅜
May	.09½	.09	.10	.10
June	.09½	.09½	.11	.10½
July	.09⅜	.09¼	.12	.11
August	.09¼	.09	.12	.12
September	.09	.09	.12	.11⅜
October	.09	.08½	.11½	.11
November	.08¼	.08¼	.10⅜	.10⅜
December	.08½	.08¼	.10⅜	.10⅜
Year	.12¼	.08¼	.12	.08¼

Navy Gasoline, Cases

(58-60 deg., 437 endpoint)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.2790	$0.2740	$0.2390	$0.2365
February	.2740	.2665	.2365	.2365
March	.2665	.2440	.2465	.2365
April	.2440	.2440	.2540	.2490
May	.2440	.2390	.2540	.2540
June	.2440	.2440	.2590	.2540
July	.2440	.2440	.2690	.2590
August	.2440	.2440	.2690	.2690
September	.2440	.2390	.2690	.2690
October	.2440	.2390	.2690	.2640
November	.2390	.2390	.2640	.2640
December	.2390	.2390	.2640	.2640
Year	.2790	.2390	.2690	.2365

Naphtha, Bulk

(61-63 degrees)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13⅛	$0.12¾	$0.09¼	$0.09
February	.12¾	.12¾	.09	.09
March	.12¼	.11¼	.10	.09
April	.11	.10⅝	.10½	.10¼
May	.10½	.09¾	.10½	.10½
June	.10½	.10¼	.11½	.11
July	.10½	.10	.12½	.11½
August	.10	.09¾	.13	.13
September	.09¾	.09¾	.13	.12¾
October	.09¾	.09¾	.12½	.12
November	.09	.09	.11¾	.11¾
December	.09¼	.09	.11⅜	.11⅜
Year	.13¼	.09	.13	.09

Naphtha, Bulk

(64-66 degrees)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.14⅛	$0.13¾	$0.09¾	$0.09⅛
February	.14	.13⅜	.09½	.09½
March	.13¼	.12¼	.10	.09
April	.12	.11⅜	.11	.10¾
May	.11	.10½	.11	.11
June	.11¼	.11	.12	.11½
July	.11¼	.10¾	.13	.12
August	.10¾	.10½	.13½	.13½
September	.10½	.10½	.13½	.13¼
October	.10½	.10	.13½	.12¾
November	.09½	.09½	.12¾	.12¼
December	.09¾	.09½	.12¾	.12¾
Year	.14⅛	.09½	.13½	.09

Naphtha, Bulk

(66-68 degrees)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.17	$0.16¼	$0.12¾	$0.12½
February	.16¼	.16	.12½	.12½
March	.15½	.14¼	.13½	.12½
April	.14	.13⅜	.14	.13¾
May	.14	.13½	.14	.14
June	.14¼	.14	.15	.14½
July	.14¼	.13¾	.16	.15
August	.13¾	.13½	.16½	.16½
September	.13½	.13½	.16½	.16¼
October	.13½	.13	.16	.15½
November	.12½	.12½	.15¼	.15¼
December	.12¾	.12½	.15¼	.15¼
Year	.17	.12½	.16½	.12½

Kerosene

Standard White, Bulk

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09	$0.08½	$0.07	$0.06¾
February	.08½	.08½	.06¾	.06¾
March	.08¼	.07¾	.07	.06¾
April	.07	.06⅝	.07⅜	.07
May	.06¼	.06¼	.07⅜	.07⅜
June	.06¼	.06¼	.07⅜	.07⅜
July	.06¼	.06¼	.07⅜	.07⅜
August	.06¼	.06¼	.07⅜	.07⅜
September	.06¾	.06¼	.07⅜	.07⅜
October	.07¼	.07¼	.07⅜	.07⅜
November	.07	.07	.07⅜	.07⅜
December	.07	.07	.07⅜	.07⅜
Year	.09	.06¼	.07⅜	.06¾

Standard White, Cases

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.1915	$0.1865	$0.1715	$0.1690
February	.1865	.1865	.1690	.1690
March	.1865	.1715	.1690	.1690
April	.1715	.1665	.1740	.1690
May	.1615	.1615	.1740	.1740
June	.1615	.1615	.1740	.1740
July	.1615	.1615	.1740	.1715
August	.1615	.1615	.1740	.1715
September	.1615	.1615	.1740	.1740
October	.1715	.1715	.1765	.1740
November	.1715	.1715	.1765	.1765
December	.1715	.1715	.1765	.1765
Year	.1915	.1615	.1765	.1690

Water White, Bulk

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.10½	$0.10	$0.08	$0.07⅜
February	.10	.10	.07⅜	.07⅜
March	.09⅜	.08½	.08	.07⅜
April	.08	.07⅝	.08⅜	.08
May	.07¼	.07¼	.08⅜	.08⅜
June	.07¼	.07¼	.08⅜	.08⅜
July	.07¼	.07¼	.08⅜	.08⅜
August	.07¼	.07¼	.09	.08⅜
September	.07⅜	.07¼	.09	.08⅜
October	.08¼	.08¼	.09	.09
November	.08	.08	.08⅜	.08⅜
December	.08	.08	.08⅜	.08⅜
Year	.10½	.07¼	.09	.07⅜

Water White, Cases

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.2065	$0.2015	$0.1815	$0.1790
February	.2015	.2015	.1790	.1790
March	.2015	.1815	.1790	.1790
April	.1815	.1765	.1840	.1790
May	.1715	.1715	.1840	.1840
June	.1715	.1715	.1840	.1840
July	.1715	.1715	.1840	.1815
August	.1715	.1715	.1865	.1815
September	.1765	.1715	.1865	.1865
October	.1815	.1815	.1890	.1865
November	.1815	.1815	.1890	.1890
December	.1815	.1815	.1890	.1890
Year	.2065	.1715	.1890	.1790

Water White, Bulk

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.09½	$0.09	$0.07	$0.06⅝
February	.08⅜	.08½	.06⅝	.06⅝
March	.08½	.07½	.06⅞	.06⅝
April	.07	.06½	.07⅜	.07
May	.06¼	.06¼	.07⅜	.07⅜
June	.06¼	.06¼	.08⅜	.07½
July	.06¼	.06¼	.07⅜	.07⅜
August	.06¼	.06¼	.07⅜	.07⅜
September	.06⅜	.06¼	.07⅜	.07⅜
October	.07¼	.07¼	.07⅜	.07⅜
November	.07	.07	.07⅜	.07⅜
December	.07	.07	.07⅜	.07⅜
Year	.09½	.06¼	.08⅜	.06⅝

Gulf Ports

Gasoline and Naphtha

Navy Gasoline, Bulk

(58-60 deg., 437 endpoint)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.11¼	$0.10½	$0.07½	$0.07
February	.10½	.10	.07⅜	.07
March	.09⅜	.08	.07⅜	.07¼
April	.08	.07½	.08⅜	.08¼
May	.07½	.07	.08⅜	.08⅜
June	.08	.07½	.09¼	.08⅜
July	.08	.07¼	.10¼	.09⅜
August	.07½	.07¼	.10¼	.10¼
September	.07½	.07½	.10¼	.10
October	.07½	.07¼	.09⅝	.09⅜
November	.07¼	.07¼	.09½	.09⅜
December	.07¼	.07¼	.09¼	.08⅜
Year	.11¼	.07	.10¼	.07

Naphtha, Bulk

(60-62 deg., 390 endpoint)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12	$0.11¾	$0.08½	$0.08
February	.11½	.11	.08⅛	.08
March	.10¼	.08¾	.08¾	.08½
April	.08½	.08½	.09¼	.08⅞
May	.08	.07½	.09⅝	.09¼
June	.08½	.08	.09⅝	.09⅜
July	.08½	.08	.11¼	.09⅞
August	.08	.08	.11½	.11¼
September	.08	.08	.11½	.11⅝
October	.08	.08	.11	.10⅝
November	.08	.08	.11	.10⅞
December	.08	.08	.11	.10½
Year	.12	.07½	.11½	.08

Naphtha, Bulk

(64-66 deg., 375 endpoint)

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.13	$0.12¾	$0.08¾	$0.08¼
February	.12½	.11¾	.08¾	.08¼
March	.10⅞	.09¼	.09	.08¾
April	.09	.08⅝	.09½	.09¼
May	.08½	.08	.09⅝	.09½
June	.09	.08½	.10	.09⅝
July	.09	.08½	.12¼	.10¼
August	.08½	.08½	.12¼	.12¼
September	.08½	.08½	.12¼	.11¾
October	.08½	.08½	.11¼	.11¼
November	.08½	.08½	.11½	.11¼
December	.08½	.08½	.11½	.10¾
Year	.13	.08	.12¼	.08¼

Kerosene

Prime White, Bulk

Per gallon

	1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$0.07½	$0.06	$0.05⅝
February	.07½	.07	.05⅝	.05⅝
March	.07	.06¾	.05⅞	.05⅝
April	.06	.05½	.06⅜	.06
May	.05¼	.05¼	.06⅜	.06⅜
June	.05¼	.05¼	.07⅜	.06½
July	.05¼	.05¼	.06⅜	.06⅜
August	.05¼	.05¼	.06⅜	.06⅜
September	.05⅜	.05¼	.06⅜	.06⅜
October	.06¼	.06¼	.06⅜	.06⅜
November	.06	.06	.06⅜	.06⅜
December	.06	.06	.06¼	.06⅜
Year	.08	.05¼	.06⅜	.05⅝

Naval Stores Production

According to data collected in co-operation with the Department of Agriculture at the recent biennial census of manufactures, the establishments engaged primarily in the distillation of turpentine and rosin from crude gum reported products for the crop year ended March 31, 1928, valued at $39,902,971, a decrease of 5.8 percent as compared with $42,364,413 for the crop year ended March 31, 1926, the last preceding census year. These establishments reported a total production of 31,549,082 gallons of turpentine and 2,071,813 barrels (of 500 pounds) of rosin.

This industry embraces establishments engaged primarily in the distillation of turpentine and rosin from crude gum, a semi-fluid exudation from certain species of pine trees. No data for establishments reporting products valued at less than $5,000 are, however, tabulated.

In addition, considerable quantities of turpentine and rosin are made by the distillation of wood, both by the steam-solvent process and by the destructive process. During the calendar year 1927 the production by these processes amounted to 4,390,796 gallons of turpentine and 452,167 barrels of rosin. These quantities represent increases of 31.5 percent and 39.3 percent, respectively, as compared with the corresponding figures for the crop year 1925-1926.

Of the 1,149 establishments reporting for 1927-1928, 614 were located in Georgia, 343 in Florida, 113 in Alabama, 32 in South Carolina, 28 in Mississippi, 13 in Louisiana, 5 in Texas, and 1 in North Carolina.

Detailed figures follow:—

	1927-28.	1925-26.
Number of establishments	1,149	1,007
Wage earners (average for the year)*	37,913	29,413
Wages	$16,953,054	$15,190,076
Cost of materials, plant supplies, fuel, and purchased power, total	$12,173,394	$11,887,395
Materials and supplies	$11,708,436	†
Fuel and power	$464,958	†
Value of products	$39,902,971	$42,364,413
Value added by manufacture	$27,729,577	$30,477,018
Horsepower	3,211	3,138

* Not including salaried employes.
† Not reported separately.

Output from Crude Gum

	Crop year ended March 31, 1928. Turpentine. Gallons.	Rosin. 500-lb. barrels.
United States	31,549,082	2,071,813
Alabama	2,179,710	144,381
Florida	10,275,713	711,852
Georgia	15,060,761	953,923
Louisiana and Texas	1,357,929	93,601
Mississippi	1,879,418	117,688
North Carolina and South Carolina	795,551	50,368

Output by Wood Distillation

	Calendar year 1927. Turpentine. Gals.	Rosin. 500-lb. bbls.	Crop year ended March 31, 1926. Turpentine. Gals.	Rosin. 500-lb. bbls.
United States	4,333,176	452,187	3,339,173	324,504

Stocks on Hand

	March 31, 1928. Turpentine. Gals.	Rosin. 500-lb. bbls.	March 31, 1926. Turpentine. Gals.	Rosin. 500-lb. bbls.
At crude-gum stills	508,391	101,998	378,400	92,245
By consumers	1,367,883	211,903	848,890	165,543
At wood distillation plants	*543,114	*98,101	233,944	22,838
At ports and distributing points	3,907,816	196,732	2,591,600	163,595
Totals	*6,327,704	*608,734	4,052,834	444,221

* Not including stocks at destructive wood-distillation plants.

Oilcake and fertilizer (except crude phosphates) are exempt from the octroi sea tax in French Oceania, according to a decree dated December 20, 1928.

An agreement between the Mines de Lens, one of the largest French coal-producing companies, and the Societe Petrofina, principal importer of Russian petroleum, has been reached for the purpose of reorganizing the Petroleum Refinery of the Nord, and also to study the present status of synthetic petroleum with a view to using the coal of the former company.

A test well being drilled in Wirt, near Wellsville, N. Y., by Sawyer & Son, has reached a depth of more than 4,500 feet and will be continued to at least 5,000 feet if no oil is found previously. Moore & Son has reached the 2,000 foot depth in its test well in the same region, while George Hall, Clarion, Pa., has begun a similar exploration near Inavale, N. Y.

Fertilizer Materials: Market Review

Further indications of recovery in the position of the fertilizer industry were discernible during the past year, and the close of 1928 witnessed a general strengthening of the economic position of leaders in the industry. Sales of plant food, from the standpoint of volume, were somewhat disappointing, although prices were well maintained throughout the greater part of the season, and net returns to the industry were better than for several years past.

Although beset with increasing competition from synthetic nitrogen, both in Europe and the United States market, the Chilean nitrate of soda industry progressed further in its development, and markets for this product were well stabilized throughout the year. In this respect, 1928 was noteworthy for the return to the controlled selling plan under the sponsorship of the principal producing companies operating in Chile, with the exception of the American interests, which because of the anti-trust laws in this country were unable to participate in the monopoly organized by the other Chilean producers.

Firm markets for the animal ammoniates prevailed during the entire year, the market at no time being oversupplied with this material. A falling-off in slaughtering was reported in the United States, and American fertilizer manufacturers were depending to a greater extent upon imported ammoniates to take care of their requirements.

Steady progress was made in the development of synthetic nitrogen products, both in this country and abroad. In the United States, the end of 1928 witnessed the starting of operations by a leading manufacturer developing synthetic nitrate of soda, with ambitious plans made by other interests to enter synthetic nitrogen development work on a large scale in this country. The Muscle Shoals project continued in abeyance, although developments during the year indicated the possibility of an early disposal of this plant, and its probable utilization in the manufacture of synthetic nitrogen.

Manufacturers of mixed fertilizers were successful in maintaining their list prices during the greater part of the year, and there was much less demoralization in this respect than had been the case for many years. In addition, the makers of mixtures were successful in further developing the consumption of high test plant foods, and anticipate continued progress in this direction during 1929.

While the showing of the industry for 1928 was satisfactory, in the main, leaders in the industry are sounding a note of caution for the current year. According to leading interests in the fertilizer trade, to what extent the reduced sales for the fall, 1928, period and the reduction for December have been due to the high money market is difficult to judge, but it is known that the general restriction of central bank credit has caused many commercial bank failures in the cotton states from North Carolina to Alabama, where the largest reduction in sales of fertilizers occurred during the past fall. The intermediate rediscount rates were advanced from 4¾ to 5¾ percent on September 15, 1928. This has increased the rate to the farmer for loans for the purchase of fertilizer to 7¾ percent, which is the highest rate charged farmers since the intermediate credit banks were organized. The failures of commercial banks in the cotton belt and the high rediscount rates at intermediate credit banks have greatly restricted credit available to farmers. While some bankers are of the opinion that an increase in the loan rate to farmers at intermediate credit banks from 6¾ percent to 7¾ percent will not affect the volume of loans, this hardly seems likely in the opinion of leading fertilizer interests. At any rate there has been a material curtailment in the sales of fertilizer during the past fall, and also a large decrease in the intermediate credit loans at the Columbia, S. C., bank, where a large part of fertilizer loans are made. During the spring peak of 1926 rediscounts at the intermediate credit bank at Columbia were more than $14,000,000. The peak during the spring of 1927 was slightly more than $8,000,000, and for the spring of 1928 slightly more than $6,000,000, which is far less than half the loans at the peak for the spring period of 1926.

For the calendar year 1928 total sales of fertilizer in the thirteen tag sale states were 21 percent larger than for 1927. The largest increases were 79.6 percent for Texas, 67.4 percent for Arkansas, 54.7 percent for Louisiana, 52.4 percent for Mississippi, 42.4 percentcent for Alabama, 23.9 percent for Georgia, and 15.2 percent for North Carolina. These increases occurred over the small sales of 1927, but there was an increase in the total of 8 percent over the calendar year 1926. For these thirteen states the total sales for 1928 were the largest of record. The small sales of 1927 were due to the low price of cotton and flood conditions in the Mississippi Valley, and the recovery from the decline was to have been expected.

Fertilizer sales as indicated by sales of tax tags* during the calendar years 1923-28, in short tons, were as follows:—

	Percent.†	1928.	1927.	1926.	1925.	1924.	1923.
Virginia¶	107.3	437,709	408,008	435,223	451,656	441,895	422,350
North Carolina	115.2	1,349,300	1,171,499	1,218,176	1,217,822	1,183,053	1,066,553
South Carolina¶	108.5	788,293	726,736	840,128	873,255	844,440	693,386
Georgia	123.9	883,274	713,047	780,302	778,808	678,959	675,867
Florida¶	112.3	468,907	417,438	398,480	358,463	365,317	398,564
Alabama	142.4	681,100	478,400	615,364	598,115	456,840	447,913
Mississippi	152.4	333,350	218,750	278,075	258,028	206,122	208,385
Tennessee¶	134.0	150,726	112,473	156,336	142,174	115,230	106,361
Missouri	115.7	64,922	56,100	56,891	63,939	47,121	51,597
Arkansas	167.4	126,391	75,487	126,175	128,387	96,750	79,616
Louisiana¶	154.7	143,693	92,866	114,347	110,784	124,668	104,624
Texas¶	179.6	144,643	80,521	125,150	101,008	127,791	78,787
Indiana‡	93.2	223,772	239,852	223,944	226,148	192,417	198,581
Totals‡	121.0	5,796,140	4,791,177	5,368,591	5,303,587	4,880,603	4,532,584

* Monthly records of sales of tags are kept by State control officials and are usually slightly larger or smaller than actual sales of fertilizer.

† Percent 1928 is of 1927.

‡ The figures for Indiana for 1926-28 are based on tag sales, while those for 1923-25 are based on fertilizer sales.

¶ Cottonseed meal sold as fertilizer included.

The Nitrate Situation

The London point of view with respect to the situation in the fertilizer market, with particular reference to Chile nitrate of soda, is covered in a comprehensive way in Aikman's annual report, which follows:—

Both the production and consumption of nitrogenous fertilizers have continued to expand during the year under review, and so far as can at present be seen the estimate of production of pure nitrogen made six months ago for the twelve months ending June 30, 1929, of 1,975,000 tons seems likely to prove fairly accurate. Of this quantity, Chilean nitrate will represent about 500,000 tons, or 25½ percent, against 23¾ percent, 20½ percent, 26¾ percent, 33½ percent and 35 percent for the previous five years. The steady improvement in the relative position of the Chilean article during the last two years is primarily due to its price having come more into line with other nitrogenous products, and also to a growing appreciation of its unequalled qualities. This improvement is likely to make further headway during the next few years, with the substantial help that the industry is now receiving from the Chilean Government.

The feature in the nitrogen industry has been the changed method of selling adopted by the Chilean nitrate producers at the instigation of and with a subsidy from the Chilean Government. After one year of free selling when prices both in Chile and in consuming markets were allowed to fluctuate according to the vagaries of supply and demand, producers have fixed prices and conditions of sale in all the consuming markets of Europe and Egypt, and by introducing a form of centralized selling exercise a full measure of control on all who participate in the sale and distribution of nitrate. By fixing values at very moderate levels producers have made it possible for Chilean nitrate to compete successfully with synthetic nitrogenous products, and there is every reason for Chile to anticipate again this year a satisfactory extension in the demand. The significance of the changed method of selling has not been generally realized, as it places in the hands of the Chilean Government the power to dictate prices in these markets, and should eventually pave the way to an international agreement on nitrogen prices. So far as the United States and other countries—where the competition from synthetic products is, so far, less acute— are concerned, prices have for the present been fixed f.o.b. Chile. A quasi monopoly has been granted for the Japanese market, the results of which will be watched with interest.

The following is a comparison of the nitrate of soda figures for the six months ending December 31, 1913, 1925, 1926, 1927 and 1928, and the nitrate years ending June 30, 1914, 1926, 1927 and 1928:—

	1913-14.	1925-26.	1926-27.	1927-28.	1928-29.
			Tons		
Deliveries in Europe and Egypt for six months ending December 31	490,000	315,500	296,500	311,000	355,000
Deliveries in Europe and Egypt for twelve months ending June 30	1,984,000	992,000	917,500	1,315,000	.....
Deliveries in United States for six months ending December 31	258,000	418,000	206,000	305,000	240,000
Deliveries in United States for twelve months ending June 30	553,000	923,000	673,500	995,000	.....
Deliveries in other countries for six months ending December 31	45,000	85,000	96,000	113,000	100,000
Deliveries in other countries for twelve months ending June 30	92,000	177,000	162,000	208,000	.....
Shipments to Europe and Egypt for six months ending December 31	1,194,000	784,000	300,000	984,000	933,000
Shipments to Europe and Egypt for twelve months ending June 30	2,025,000	1,112,000	737,000	1,540,000	.....
Shipments to United States for six months ending December 31	236,000	427,000	279,000	387,000	333,000
Shipments to United States for twelve months ending June 30	547,000	928,000	614,000	1,072,000	.....
Shipments to other countries for six months ending December 31	46,000	96,000	102,000	130,000	112,000
Shipments to other countries for twelve months ending June 30	87,000	172,000	169,000	213,000	.....
Production in Chile for six months ending December 31	1,367,000	1,330,000	737,000	1,028,000	*1,630,000
Production in Chile for twelve months ending June 30	2,822,000	2,578,000	1,297,000	2,507,000	.....
Visible supply for Europe and Egypt at December 31	1,098,000	678,500	328,000	803,000	*917,500
Visible supply for United States at December 31	71,000	128,000	192,000	130,500	*204,000
Visible supply for other countries at December 31	18,000	35,000	25,000	43,000	*43,000
Stocks in Chile at December 31	498,000	879,000	1,274,000	519,000	*922,000
Total supply in sight at December 31	1,685,000	1,720,500	1,819,000	1,495,500	*2,086,500

* Estimating production in December at 285,000 tons, and shipments at 200,000 tons to Europe and Egypt, 70,000 tons to the United States, and 15,000 tons to other countries.

World's Consumption

During the six months the port deliveries amount to 695,000 tons, against 729,000 tons last year, showing a decrease of 34,000 tons. Europe shows an increase of 62,500 tons, Egypt a decrease of 18,500 tons, the United States a decrease of 65,000 tons, and other countries a decrease of 13,000 tons. The increase in European deliveries is due to the operation of the centralization scheme and the low level of price, and a further large increase is looked for during the coming six months. The decrease in Egypt is attributable to the accumulation at the end of June last of rather excessive stocks in the interior, and also to the fixing under the centralization scheme of a uniform price for deliveries throughout the whole year, which removes the incentive which existed formerly to import unduly large quantities at the relatively attractive summer prices. All indications, however, point to a larger consumption than last year, and much heavier deliveries during the next few months are expected. The decrease in the United States is also more apparent than real, as it was formerly the custom to treat arrivals as deliveries, owing to the difficulty in obtaining accurate statistics. This has, however, now been overcome, and the figures this year represent real deliveries, an ultimate increase in which over the twelve months is expected. The decrease in other countries is due to the incidence of arrivals, and there also an increase is expected during the next six months. An estimate of the world's consumption for the year ending June 30, 1929, is more difficult to arrive at than in former years, owing to the changed method of selling, but judging from sales already made the total figure appears likely to reach, and may exceed, 2,750,000 tons against 2,518,000 tons last year. Production during the same period is likely to be about 3,250,000 tons, against 2,507,000 tons. It is thus evident that production for the current year will show a substantial increase over consumption; but this surplus, if carried in Chile, should only increase stocks to a normal figure under the new method of selling, and one which would be only commensurate with the increased rate of production.

European Consumption

In France forward sales have been on an unprecedentedly large scale, and in most other European countries are also in excess of last year. Russia alone—which bought 45,000 tons last year—has so far made no purchases, no doubt on account of credit difficulties.

A detailed tabulation of deliveries and stocks in Europe and Egypt is given on page 106.

Scheme for Centralization of Sales

At the end of June the Chilean Government requested the Producers' Association to immediately prepare a scheme for the centralization of sales in consuming markets, and committees consisting of government representatives, producers, and distributors, were at once set up both in Valparaiso and London, for this purpose. As a result it was found possible to submit to the government on August 9 a comprehensive scheme under which the producers were to be guaranteed a fixed price, and under which free-on-rail selling prices—with a scale of commissions and rebates for the various middlemen—were to be fixed in all the consuming markets in Europe and Egypt, and prices f.o.b. Chile for the United States and other markets. The prices recommended were in all cases based on local conditions, taking into account the competitive prices of synthetic nitrogen products. This scheme was accepted in toto by the government.

At an extraordinary general meeting of the members of the association held in Valparaiso on August 14 to pass the necessary amendments to the statutes to put the scheme into operation the Anglo-Chilean Consolidated Nitrate Corporation and the Grace Nitrate Company representing together about 15¾ percent of the industry, declared that they were unable to join, and, at the request of the Chilean Government the majority producers, at a subsequent meeting on the same day, formed a nitrate selling corporation to carry out the scheme which was to cover a period August 15, 1928, to June 30, 1930. The two producers outside the scheme were left free to dispose of their own production, but without any subsidy from the government. Under the scheme fifteen authorized distributors were appointed, to whom total quotas of about 1,800,000 tons were allotted for distribution in Europe and Egypt, and the balance of the production is held for f.o.b. sales to the United States and other countries. At June 30, 1929, total sales—whether f.o.b. Chile or in the retail markets, worked back to a f.o.b. Chile equivalent—will be distributed among the producers in relation to their quotas, which will be based on stocks at June 30, 1928, plus production July 1, 1928, to June 30, 1929; and producers who have oversold will receive stocks at the average price from those who have undersold. The full benefits of centralized selling can scarcely be manifest before April or May, next, but it is already apparent that the present system of selling in Europe and Egypt is a vast improvement upon its predecessors. It has imparted to the market a feeling of stability hitherto unknown, and by the wise decision to protect stocks against any reduction in prices either during or at the end of the season, buyers have been encouraged to forget the restraint which formerly characterized their attitude towards the nitrate market. At the same time it must not be inferred that the new scheme of selling is perfect; already certain faults are in evidence, while others will doubtless reveal themselves, and it is expected that great improvements will be introduced next year in the light of the experience gained this season.

On May 7 the government announced its intention to pay a subsidy of £250,000 to producers based on January-March, 1928, production, or the equivalent of 8d. per metric quintal; and the subsidy now promised on the sales for July 1, 1928-June 30, 1929, appears likely to reach £1,750,000 to £2,000,000.

The general outlook for producers is much more favorable than it has been for many years, as it is evident that the Chilean Government are determined to increase the production and consumption of nitrate by giving whatever help the industry may require to attain this end, and it is now clearly appreciated in Chile that to obtain capital for the exploitation of new nitrate grounds the existing producers must be enabled to earn commensurate profits.

Costs of production continue satisfactory, and profits on nitrate, based on the present guaranteed selling price, vary from 1s. 6d. to 4s. per metric quintal, without allowance for amortization, and, in addition, profits from the sale of iodine are about the equivalent of 6d. to 9d. per metric quintal of nitrate produced. Experiments continue as to the possibility of using iodine in petrol as a dope, and although opinions differ as to the probability of success, considerable optimism is maintained in some quarters.

Freights

Freights fluctuated between 28s. and 15s. per ton during the first half of the year and during the last half between 18s. and 31s. per ton. A few transactions in forward liner space have taken place at 25s. to 26s. per ton for April, 1929-March, 1930.

Ammoniates

Nitrate of soda prices were considerably lower in 1928 than was the case during the previous year. Chilean producers reduced their f.o.b. schedules to overcome competition from synthetic materials, and these declines were passed along to consumers. During the greater part of 1928, American importers were working on a much narrower margin than normally, in their efforts to hold their markets against the inroads of competing fertilizers.

The elimination of "free selling" at the start of the 1928-1929 selling campaign, and the restoration of the controlled price idea had caused distributors some concern, but this change, together with the increased co-operation and support afforded by the Chilean government, tended to work for a material stabilization in the nitrate market situation, and resulted in a material expansion in sales. During the closing quarter of the year, the Chilean Nitrate of Soda Producers' Association announced that it would protect distributors on carryover stocks on hand at the close of the current nitrate year, June 30, next.

The domestic market for Chile nitrate was adversely affected during the fall selling season by the high money rates prevailing in the cotton belt, and the general tendency on the part of planters to defer fertilizer purchases until the goods were actually needed. As a result of this trend, the volume of future business written for delivery

Nitrate Deliveries and Stocks in Europe and Egypt

	U. K.	France.	Belgium.	Holland.	Spain and Portugal.	Italy.	Scandinavia.	Egypt.	Germany and Baltic ports.	Total.
Deliveries—										
July-December, 1913	46,000	42,000	80,000	19,000	6,000	6,000	.....	29,000	262,000	490,000
July, 1913-June, 1914	123,000	350,000	205,000	100,000	50,000	65,000	76,000	55,000	960,000	1,984,000
July-December, 1925	33,500	40,500	30,500	19,500	37,500	7,000	4,500	111,000	31,500	315,500
July, 1925-June, 1926	70,500	189,000	129,000	120,000	103,500	55,000	69,500	161,000	94,500	992,000
July-December, 1926	14,000	52,500	27,000	18,500	25,500	10,000	4,500	116,000	28,500	296,500
July, 1926-June, 1927	51,000	237,500	86,500	88,000	108,000	43,500	49,000	154,500	99,500	917,500
July-December, 1927	26,500	31,000	15,500	15,500	35,000	7,500	1,000	113,000	66,000	311,000
July, 1927-June, 1928	70,500	307,000	123,500	128,000	137,000	62,500	64,000	177,000	245,500	1,315,000
July-December, 1928	25,500	67,000	29,500	28,000	36,000	12,500	3,000	94,500	59,000	355,000
Stocks—										
December 31, 1913	42,000	107,000	97,000	13,000	3,000	8,000	.....	.....	106,000	376,000
December 31, 1925	20,000	139,500	100,000	39,000	53,000	9,500	5,000	27,500	21,000	414,500
December 31, 1926	7,000	71,000	55,500	32,000	28,000	6,500	500	13,500	15,000	235,000
December 31, 1927	14,000	177,000	69,000	36,500	80,000	6,000	500	34,000	28,500	445,500
December 31, 1928	20,000	178,500	78,000	80,500	72,000	20,000	4,000	40,000	105,500	598,500

during the spring selling season, this year, is currently reported to be considerably smaller than in former years. The high price for 1928, $2.40 per 100 pounds, was attained during the first month of the year, and the market then weakened progressively, selling off to $2.10 per 100 pounds in September. A slight recovery in price developed during the closing three months, the market having advanced to $2.17½ per 100 pounds by the close of the year. The high for 1928 was 35c. per 100 pounds under the 1927 high, and the 1928 low 15c. under the low for the preceding year.

Resale soda nitrate was a market factor at various times during the spring and fall selling seasons, but as a rule this type of selling represented profit-taking on earlier purchases, rather than distressed selling, although some transactions of the latter character of course developed.

Domestic producers of synthetic nitrate of soda have booked some business for delivery during the spring, 1929, selling campaign, and it is expected that this product will become a sharper competitor of the natural Chile product.

High freight rates were instrumental in strengthening the position of Chilean nitrate of soda in domestic markets toward the close of 1928, the advances in transportation costs cutting very materially into importers' profit margins. Owing to the unfavorable market position, due to curtailed buying, importers were not in position to pass on the higher import costs to their trade, but this situation is expected to be adjusted by an upward price movement when spring buying hits its stride.

Synthetics Make Progress

Production of synthetic nitrogen showed material gains during the year, with further increases in sight. Germany continued a leader in this field, it being estimated that German production of synthetics for the current fertilizer year, which expires June 30, 1929, will aggregate 780,000 tons, an increase of 120,000 tons, over the production for the 1927-28 fertilizer year. France also made further progress in this direction, while Scandinavian countries also increased their output.

In the United States, the large chemical company which for the past two years has been building a large air fixation plant in the South, got into production toward the close of 1928. Output of synthetic nitrogen from this source thus far has been rather small, but the plant is expected to get into quantity production during the early part of 1929, and be established as an important factor in the American fertilizer situation by the end of the year. Considerable quantities of the synthetic nitrate of soda to be made by this plant have already been booked for delivery during the spring, 1929, season.

A number of other domestic synthetic nitrogen projects are under way and contemplated, and it is probable that after a belated start in synthetic nitrogen fixation American companies will go into the industry in a large way.

The World Cartel

Progress toward the idea of a world fertilizer cartel was made during 1928. During the spring months, German chemical and fertilizer interests were hosts to representatives of the industry from all parts of the world on an ocean cruise, the business sessions of which constituted a virtual world fertilizer convention.

While participation by American interests in any world cartel plan appears unlikely, in view of the stringency of the anti-trust laws in this country, it is indicated that the industry in other parts of the world has made satisfactory progress toward getting the cartel plan of operation on a working basis.

Reports from Chile indicate that it is probable the Chilean nitrate of soda interests may go into a world market control scheme. The Chilean industry, however, has put itself upon a strategic basis, and is in position to remain out of the world cartel and still control a large part of the world's fertilizer business, thrqugh steps which have been taken by the Producers' Association, in conjunction with the Chilean government, in consolidating its position in foreign markets. Two years ago, when the Chilean nitrate industry was asked to participate in a world cartel, conditions in the soda nitrate market were semi-demoralized, and the Chilean industry was in a poor strategic position for any negotiations regarding world market allotments. Now, however, the situation has changed so radically that the Chilean nitrate of soda producers are in a position where they can practically dictate their own terms in aligning themselves with other world producers of nitrogenous fertilizers.

Ammoniates

Strong markets for domestic sulphate of ammonia prevailed practically during the entire year. A shortage of spot material prevailed during the spring selling season, and resale material dominated the situation, carrying prices forward for substantial increases over the producers' schedules. Domestic producers booked heavily on contracts for the 1928-29 season, and thus far there has been very little open market trading. Recent developments, however, have indicated that many consuming manufacturers are overbought, and plentiful offerings on the resale market have tended to make for easy prices. According to trade reports, a number of buyers contracted in excess of their requirements, anticipating a shortage of spot material in the spring season, with a consequent jump in prices, such as occurred during the first quarter of 1928. Domestic ammonia sulphate producers, however, have succeeded in pricing their product for the current season at a level where the imported synthetic material offers little real competition. Export sulphate of ammonia moved within a narrow range during 1928, the top being $2.45 and the low for the year $2.35, against $2.55 and $2.30, respectively, in 1927.

Blood stocks were at no times excessive in 1928, and the market position reflected this situation to the full. Spot dried blood, 15-17 percent ammonia, sold at a low of $4.65 per unit last year, and at a peak price of $5.10, these quotations being 90c. and 10c. respectively, above the 1927 price range. Imported blood played an increasingly important part in the domestic market situation during the year, and prices for the foreign material were strong throughout. Blood prices have reached such a high level that fertilizer mixers are using but minimum quantities of this ammoniate, buying by the feeding interests accounting for much of the business on blood during 1928.

Cottonseed meal prices were substantially higher last year than was the case in 1927, and the popularity of this ammoniate as a fertilizer fell off accordingly. The market for the 7 percent ammonia grade started the year at $36 per ton, f.o.b. mill points, within $1 of the high for 1927, and advanced consistently until May, when it reached the top for the year, $52 per ton. The market then eased off and sold down to $38 per ton during the late fall months. Fertilizer manufacturers have been holding aloof from the cottonseed meal market in anticipation of heavy offerings of off-color meal during the spring months this year, but thus far, the supply of this cheaper grade of meal has not come up to expectations.

In keeping with other animal ammoniates, hoofmeal worked into strong position in 1928, and quotations were consistently above 1927 levels. The Chicago market, fairly representative of the domestic situation, showed a range from $3.25 to $4.50 as the low and high for the year. These prices were, respectively, 40c. and $1.15 per unit over the comparable levels in the preceding year. As was but natural, in view of the relatively high price levels, hoofmeal was used in but moderate quatities in plant food mixtures, and found its way more largely into stock feeds.

Makers of fish scrap experienced a sellers' market throughout the entire 1928 campaign. During the first quarter of the year, spot dried scrap commanded $5.90 and 10c. per unit, at factories, this being 10c. under the high level for 1927. During the second quarter of the year, makers were entirely sold out, no quotations being available. At the start of July, business was taken on a when-and-if-made contract basis at $5.50 and 10c. per unit, sales being large. The market held at that level until September, when a slight spurt in production weakened the market, and prices dropped to $5 and 10c. This loss was recovered early in October, however, and the market closed the year firm at $5 50 and 10c. per unit, with the factories practically cleared of holdings. Wet acidulated fish scrap was in similar position throughout the year. Trading started off the year at $4 and 50c. per unit, bulk, at factories. Early in July, when business for the new season was getting under way, the market firmed up to $4.50 and 50c., subsequently reacted to $4.25 and 50c., and in November jumped to $4.75 and 50c. per unit, the high point for 1928, closing the year at that level. Makers were practically sold out of all wet acidulated scrap at the year-end.

Tankage prices were also consistently over 1927 levels during the year just ended, and the market was closely sold up at all times. This was due both to the curtailed output, and the increasing consumption of this ammoniate by manufacturers of mixed feeds. Fertilizer mixers were curtailing their consumption of tankage in plant food mixtures as much as possible, owing to the high prices prevailing. The high and low figures on concentrated tankage at Chicago for the year were $4.25 and $3.75 per unit, respectively, against $4 and $3.50 in 1927. Unground tankage at Chicago showed a high of $4.25 and 10c. per unit for 1928 and a low of $3.85 and 10c., as compared with $3.85 and 10c. and $3.25 and 10c., respectively, in 1927. Unground tankage at New York was also higher, reaching a high of $4.60 and 10c. per unit last year, against a top of $4.50 and 10c. in 1927. The low for 1928, $4.30 and 10c. per unit, was 65c. over the low figure attained in the previous year.

Phosphates

The outstanding development in this division of the market for 1928 was the strong recovery shown by superphosphate. Up to the start of 1928, manufacturers of this material had undergone several years of intense price competition and the industry was honeycombed with price cutting. During the latter part of 1927, strong efforts were made to secure a closer observance to trade ethics in sales in the superphosphate market, and these efforts bore fruit in 1928. Trading in superphosphate started off in 1928 at $8.50 per ton for the run-of-pile material, basis 16 percent, at Baltimore producing plants. This figure was equal to the low for 1927, and prevailed during the first five months of 1928. In June, however, manufacturers succeeded in putting into effect and maintaining an advance of $1.10 per ton, and on September 1 put into effect a further 40c. mark-up, bringing the quotation to $10 per ton, which figure prevailed at the close of the year. At $10 per ton, the market was $1.25 over the high figure for the previous year.

There were few developments of importance in the phosphate rock division of the trade. Prices were about in line with 1927 levels throughout the year. Domestic producers were experiencing increasing competition in export markets, due largely to the larger output in Africa, where French interests have been increasing development operations at a rapid pace.

Bone materials were in strong position throughout 1928, but the volume of business in this line, insofar as the fertilizer trade was concerned, showed some falling off. Prices were sharply over 1927 levels in most instances. With a decrease reported in slaughtering operations, bone material stocks were smaller, and competitive buying by makers of mixed feeds and other consumers aside from the fertilizer industry kept prices at levels unattractive to the makers of mixed plant foods.

Potashes

Material gains in sales of German and French potash in American markets were recorded during 1928, and representatives of the foreign syndicates look for further expansion in this direction during 1929. Production has been increased somewhat both in Alsace and in Germany, and extensive efforts to develop work markets are being made.

Spanish potash was reaching American markets in larger quantities in 1928, and current indications are that the Spanish product will be an increasingly important factor in this country, although thus far the volume of imports of the Spanish salts is negligible in comparison with receipts of French and German potashes.

There were no important developments in the domestic potash situation last year. Domestic production was speeded up somewhat, but the various ambitious projects for additional developments of deposits in the Southwest did not pass beyond the "paper" stage. High freight rates continue an insurmountable barrier against the extensive development of southwestern salt beds.

The price schedule on German and French salts in American markets held unchanged throughout 1928, at the same levels which had prevailed in the previous year, the usual discounts for early-season shipment being in effect.

There were no further developments of general interest in the progress of the government suit against potash interests, based on alleged monopoly of American potash markets, although the case had by no means been disposed of. Potash interests were viewing with some concern the probable attitude of the new administration, inasmuch as it was Herbert Hoover, as Secretary of Commerce, who instituted the original proceedings against the French and German potash syndicates.

Sulphur and Pyrites

Sulphur producers were holding their market in steady position during the entire year, the price basis at the mines remaining unchanged from the previous year at $18 per ton, bulk. There was an increasing demand on the part of the domestic trade, and in addition, exports were running into larger totals.

Trading in the pyrites branch of the market continued within narrow channels throughout the year. Practically the entire movement during the year was along contract lines, little open-market activity being witnessed. Prices held steady at 13c. per unit during 1928.

Fertilizer Materials: Record of Prices

Nitrogenous Materials

Nitrate of Soda

100 Ton Lots

September 23, 1874, the price was $2.12½ to $2.37½ per 100 pounds; October 18, 1881, $3.25; 1891, $2.15 to $2.20; 1901, $1.90 to $1.92½; 1911, $2.25 to $2.27½; 1913, $2.95; 1918, May, $5.50.

	Per hundredweight— 1927. H.	L.	1928. H.	L.
January	$2.63	$2.60	$2.40	$2.35
February	2.66	2.60	2.35	2.30
March	2.67	2.67	2.32½	2.30
April	2.65	2.65	2.32½	2.32½
May	2.60	2.55	2.32½	2.32½
June	2.75	2.60	2.30	2.17½
July	2.40	2.30	2.15	2.15
August	2.25	2.25	2.15	2.12½
September	2.32½	2.25	2.10	2.10
October	2.40	2.30	2.15	2.15
November	2.40	2.40	2.17½	2.17½
December	2.40	2.40	2.17½	2.17½
Year	2.75	2.25	2.40	2.10

Sulphate of Ammonia

March 5, 1873, the price was $7 per 100 pounds; October 18, 1881, $4.87½ to $5; 1891, $3 to $3.05; 1901, $2.77½ to $2.80; 1911, $3.20; 1913, $3.10; 1918, April, $7.85.

(Double bags, f.a.s., New York)

	Per hundredweight— 1927. H.	L.	1928. H.	L.
January	$2.55	$2.50	$2.45	$2.45
February	2.55	2.55	No stocks	
March	2.55	2.50	No stocks	
April	2.50	2.45	No stocks	
May	2.45	2.30	No stocks	
June	2.30	2.30	2.35	2.35
July	2.30	2.30	2.35	2.35
August	2.30	2.30	2.35	2.35
September	2.40	2.30	No stocks	
October	2.45	2.40	No stocks	
November	2.45	2.45	No stocks	
December	2.45	2.45	2.35	2.35
Year	2.55	2.30	2.45	2.35

Dried Blood

December 10, 1879, the price was $2.37½ to $2.45 per unit; 1881, $3.75 to $3.85; 1891, $1.95 to $2.05; 1901, $2.30; 1911, $3.05; 1913, $2.95; March, 1920, $8.75.

(15@17 percent ammonia, f.o.b. New York)

	Per unit— 1927. H.	L.	1928. H.	L.
January	$4.00	$3.75	$5.00	$4.95
February	4.25	4.10	5.10	5.00
March	4.50	4.25	5.10	5.00
April	4.50	4.50	5.00	5.00
May	4.50	4.25	4.90	4.85
June	4.25	4.00	4.95	4.90
July	4.50	4.00	4.90	4.90
August	4.50	4.50	4.95	4.85
September	4.65	4.50	4.75	4.65
October	4.75	4.65	4.75	4.65
November	4.90	4.75	4.85	4.85
December	5.00	5.00	4.80	4.75
Year	5.00	3.75	5.10	4.65

Cottonseed Meal

(F.o.b. Southeastern shipping points)

	Per ton— 1927. H.	L.	1928. H.	L.
January	$29.00	$21.50	$37.00	$36.00
February	29.00	26.50	37.00	37.00
March	29.00	28.00	38.00	38.00
April	27.50	26.00	45.00	42.00
May	28.50	26.00	52.00	45.00
June	31.50	29.00	52.00	51.00
July	33.00	32.00	50.00	49.00
August	32.00	31.00	48.00	46.00
September	33.00	32.00	45.00	45.00
October	33.00	33.00	38.00	38.00
November	34.00	34.00	40.00	39.50
December	36.00	35.00	41.00	39.50
Year	36.00	21.50	52.00	36.00

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Hoofmeal

July 4, 1904, the price was $2.25 to $2.30 per unit; October 18, 1911, $2.60 to $2.70; 1913, $2.95; 1920, May, $7.50.

(F.o.b. Chicago)

	Per unit 1927. H.	1927. L.	1928. H.	1928. L.
January	$3.00	$2.85	$3.25	$3.25
February	3.00	2.85	3.25	3.25
March	3.25	3.00	3.25	3.25
April	3.25	3.25	3.35	3.25
May	3.25	3.00	3.75	3.35
June	3.15	3.00	4.50	4.25
July	3.15	3.00	4.25	4.25
August	3.15	3.00	4.00	4.00
September	3.25	3.00	4.00	4.00
October	3.25	3.25	4.00	4.00
November	3.25	3.25	3.75	3.75
December	3.35	3.25	3.85	3.75
Year	3.35	2.85	4.50	3.25

Fish Scrap, Dry

January 6, 1902, the price was $24.50 to $25 per unit; October 18, 1911, $3.25 and 10c.; 1913, $3.10 and 10c.; 1917, November, $6.67½ and 10c.

(F.o.b. factory)

	1927. Per unit High.		1927. Low.	
January	$4.15	& .10	$4.15	& .10
February	No stocks		No stocks	
March	No stocks		No stocks	
April	No stocks		No stocks	
May	4.25	& .10	4.25	& .10
June	4.40	& .10	4.00	& .10
July	4.50	& .10	4.40	& .10
August	4.75	& .10	4.50	& .10
September	5.25	& .10	5.00	& .10
October	5.60	& .10	5.25	& .10
November	5.60	& .10	5.60	& .10
December	6.00	& .10	5.60	& .10
Year	6.00	& .10	4.00	& .10

	1928. Per unit High.		1928. Low.	
January	$5.90	& .10	$5.90	& .10
February	5.90	& .10	5.90	& .10
March	5.90	& .10	5.90	& .10
April	No stocks		No stocks	
May	No stocks		No stocks	
June	No stocks		No stocks	
July	5.50	& .10	5.50	& .10
August	5.50	& .10	5.50	& .10
September	5.50	& .10	5.00	& .10
October	5.25	& .10	5.00	& .10
November	5.50	& .10	5.50	& .10
December	5.50	& .10	5.50	& .10
Year	5.90	& .10	5.00	& .10

Fish Scrap, Wet

January 6, 1902, the price was $13 to $13.50 per unit; October 18, 1911, $2.70 and 50c.; 1919, January, $7 and 75c.

(F.o.b. factory)

	1927. Per unit High.		1927. Low.	
January	$3.00	& .50	$3.00	& .50
February	No stocks		No stocks	
March	No stocks		No stocks	
April	No stocks		No stocks	
May	3.50	& .50	3.50	& .50
June	3.50	& .50	3.50	& .50
July	3.50	& .50	3.50	& .50
August	3.50	& .50	3.50	& .50
September	3.85	& .50	3.50	& .50
October	3.85	& .50	3.85	& .50
November	4.00	& .50	4.00	& .50
December	4.00	& .50	4.00	& .50
Year	4.00	& .50	3.00	& .50

	1928. Per unit High.		1928. Low.	
January	$4.00	& .50	$4.00	& .50
February	4.00	& .50	4.00	& .50
March	4.00	& .50	4.00	& .50
April	No stocks		No stocks	
May	No stocks		No stocks	
June	No stocks		No stocks	
July	4.50	& .50	4.50	& .50
August	4.50	& .50	4.50	& .50
September	4.50	& .50	4.25	& .50
October	4.45	& .50	4.25	& .50
November	4.75	& .50	4.60	& .50
December	4.75	& .50	4.60	& .50
Year	4.75	& .50	4.00	& .50

Tankage, Concentrated

September 4, 1880, the price was $2.27½ to $2.30 per unit; October 18, 1891, $1.75 to $1.80; 1901, $1.20; 1911, $2.70; 1913, $2.45; 1920, July, $7.25.

(F.o.b. Chicago)

	Per unit 1927. H.	1927. L.	1928. H.	1928. L.
January	$3.50	$3.50	$3.75	$3.75
February	3.50	3.50	3.75	3.75
March	3.50	3.50	3.75	3.75
April	3.50	3.50	3.75	3.75
May	3.50	3.00	3.75	3.75
June	3.50	3.50	4.00	4.00
July	3.50	3.50	4.25	4.00
August	4.00	3.50	4.25	4.25
September	4.00	4.00	4.25	4.25
October	4.00	4.00	4.25	4.25
November	4.00	4.00	4.25	4.25
December	3.75	3.75	4.25	4.25
Year	4.00	3.50	4.25	3.75

Tankage, Unground, 11 and 15 Percent

(F.o.b. Chicago)

	1927. Per unit High.		1927. Low.	
January	$3.75	& .10	$3.75	& .10
February	3.75	& .10	3.75	& .10
March	3.75	& .10	3.75	& .10
April	3.75	& .10	3.75	& .10
May	3.75	& .10	3.25	& .10
June	3.25	& .10	3.25	& .10
July	3.25	& .10	3.25	& .10
August	3.35	& .10	3.25	& .10
September	3.40	& .10	3.35	& .10
October	3.75	& .10	3.40	& .10
November	3.75	& .10	3.75	& .10
December	3.85	& .10	3.85	& .10
Year	3.85	& .10	3.25	& .10

	1928. Per unit High.		1928. Low.	
January	$3.85	& .10	$3.85	& .10
February	3.85	& .10	3.85	& .10
March	3.85	& .10	3.85	& .10
April	3.85	& .10	3.85	& .10
May	3.85	& .10	3.85	& .10
June	3.90	& .10	3.90	& .10
July	4.25	& .10	3.90	& .10
August	4.25	& .10	4.25	& .10
September	4.25	& .10	4.25	& .10
October	4.25	& .10	4.25	& .10
November	4.25	& .10	4.25	& .10
December	4.25	& .10	4.25	& .10
Year	4.25	& .10	3.85	& .10

Tankage, Unground, New York

	1927. Per unit High.		1927. Low.	
January	$3.65	& .10	$3.65	& .10
February	3.75	& .10	3.75	& .10
March	3.75	& .10	3.75	& .10
April	3.75	& .10	3.75	& .10
May	3.75	& .10	3.75	& .10
June	3.85	& .10	3.75	& .10
July	3.85	& .10	3.85	& .10
August	4.15	& .10	3.85	& .10
September	4.15	& .10	4.15	& .10
October	4.35	& .10	4.15	& .10
November	4.50	& .10	4.35	& .10
December	4.50	& .10	4.50	& .10
Year	4.50	& .10	3.65	& .10

	1928. Per unit High.		1928. Low.	
January	$4.60	& .10	$4.50	& .10
February	4.50	& .10	4.40	& .10
March	4.40	& .10	4.35	& .10
April	4.35	& .10	4.30	& .10
May	4.50	& .10	4.30	& .10
June	4.50	& .10	4.50	& .10
July	4.50	& .10	4.45	& .10
August	4.50	& .10	4.45	& .10
September	4.40	& .10	4.40	& .10
October	4.45	& .10	4.40	& .10
November	4.50	& .10	4.50	& .10
December	4.60	& .10	4.50	& .10
Year	4.60	& .10	4.30	& .10

Garbage, Tankage, f.o.b. Chicago

	per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$5.00	$5.00	$5.00	$5.00
February	5.00	5.00	5.00	5.00
March	5.00	5.00	5.00	5.00
April	5.00	5.00	5.00	5.00
May	5.00	5.00	5.00	5.00
June	5.00	5.00	5.00	5.00
July	5.00	5.00	5.00	5.00
August	5.00	5.00	5.00	5.00
September	5.00	5.00	5.00	5.00
October	5.00	5.00	5.00	5.00
November	5.00	5.00	5.00	5.00
December	5.00	5.00	5.00	5.00
Year	5.00	5.00	5.00	5.00

Phosphates

Superphosphate, Basis 16 Percent

January 7, 1885, the price was $12 to $15 per ton; October 18, 1891, $14.50 to $15; 1901, $9.60 to $10; 1911, $8 to $8.75; 1913, $7.20 to $8; 1920, June, $21.

(F.o.b. Baltimore)

	per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$8.50	$8.50	$8.50	$8.50
February	8.75	8.50	8.50	8.50
March	8.75	8.75	8.50	8.50
April	8.75	8.75	8.50	8.50
May	8.75	8.75	8.50	8.50
June	8.50	8.50	9.60	9.50
July	8.50	8.50	9.60	9.60
August	8.50	8.50	9.60	9.60
September	8.50	8.50	10.00	10.00
October	8.50	8.50	10.00	10.00
November	8.50	8.50	10.00	10.00
December	8.50	8.50	10.00	10.00
Year	8.75	8.50	10.00	8.50

Phosphate Rock, Florida Land Pebble, 68 Percent

June 8, 1881, the price (grade not specified) was $14 to $16 per ton; October 18, 1881, $9.50; 1891, $6.50 to $7.50; 1901, $7 to $7.50; 1911, $3.70 to $3.80; 1913, $3 to $3.25; 1920, July, $12.

(F.o.b. mines)

	Per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$3.15	$3.00	$3.00	$3.00
February	3.00	3.00	3.00	3.00
March	3.00	3.00	3.00	3.00
April	3.00	3.00	3.00	3.00
May	3.00	3.00	3.00	3.00
June	3.00	3.00	3.00	3.00
July	3.00	3.00	3.00	3.00
August	3.00	3.00	3.00	3.00
September	3.00	3.00	3.10	3.10
October	3.00	3.00	3.10	3.10
November	3.00	3.00	3.10	3.10
December	3.00	3.00	3.10	3.10
Year	3.15	3.00	3.10	3.00

Bones, Raw, Ground

July 18, 1880, the price was $28 per ton; October 18, 1881, $35 to $37; 1891, $25 to $28; 1901, $20 to $21; 1911, $28.50 to $30; 1913, $28 to $30; 1920, July, $62.50.

(F.o.b. Chicago)

	Per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$34.00	$34.00	$34.00	$34.00
February	34.00	34.00	42.00	42.00
March	34.00	34.00	42.00	42.00
April	34.00	34.00	42.00	42.00
May	34.00	34.00	42.00	42.00
June	34.00	34.00	42.00	42.00
July	34.00	34.00	42.00	42.00
August	34.00	34.00	42.00	42.00
September	34.00	34.00	42.00	42.00
October	34.00	34.00	42.00	42.00
November	34.00	34.00	42.00	42.00
December	34.00	34.00	42.00	42.00
Year	34.00	34.00	42.00	34.00

Bones, Soft, Steamed, Unground

July 4, 1904, the price was $18 to $19 per ton; October 18, 1911, $21.50 to $22; 1913, $21.50 to $22; 1920, September, $40.

(F.o.b. Chicago)

	Per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$26.00	$26.00	$26.00	$26.00
February	26.00	26.00	28.00	27.00
March	26.00	26.00	27.00	26.50
April	26.00	26.00	26.50	26.50
May	26.00	26.00	26.50	26.50
June	26.00	26.00	26.50	26.50
July	26.00	26.00	26.00	26.00
August	26.00	26.00	26.00	26.00
September	26.00	26.00	26.50	26.50
October	26.00	26.00	26.50	26.00
November	26.00	26.00	26.50	26.50
December	26.00	26.00	26.50	26.50
Year	26.00	26.00	28.00	26.00

Bones, Ground, Steamed, f.o.b. Chicago

(1¼ and 60 percent)

	Per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$28.00	$28.00	$28.00	$28.00
February	28.00	28.00	34.00	34.00
March	28.00	28.00	34.00	34.00
April	28.00	28.00	34.00	34.00
May	28.00	28.00	34.00	34.00
June	28.00	28.00	34.00	28.50
July	28.00	28.00	30.00	30.00
August	28.00	28.00	30.00	30.00
September	28.00	28.00	28.50	28.50
October	28.00	28.00	28.50	28.00
November	28.00	28.00	28.00	28.00
December	28.00	28.00	28.50	28.50
Year	28.00	28.00	34.00	28.00

Potashes

Muriate, 80 to 85 Percent, Basis 80 Percent

August 13, 1879, the price was $1.40 to $1.42 per unit; October 18, 1881, 73c. to 76c.; 1891, 74c. to 80c.; 1901, 76.25c. to 78.80c.; 1911, 85c. to 90c.; 1913, 80c.; 1918, January, $7.30.

(F.o.b. mines)

	Per ton in bags 1927. H.	1927. L.	1928. H.	1928. L.
January	$36.40	$36.40	$36.40	$36.40
February	36.40	36.40	36.40	36.40
March	36.40	36.40	36.40	36.40
April	36.40	36.40	36.40	36.40
May	36.40	36.40	36.40	36.40
June	36.40	36.40	36.40	36.40
July	36.40	36.40	36.40	36.40
August	36.40	36.40	36.40	36.40
September	36.40	36.40	36.40	36.40
October	36.40	36.40	36.40	36.40
November	36.40	36.40	36.40	36.40
December	36.40	36.40	36.40	36.40
Year	36.40	36.40	36.40	36.40

Sulphate, 90 to 95 Percent, Basis 90 Percent

October 3, 1888, the price was $2.25 to $2.35 per unit; October 18, 1891, 83c.; 1901, 85c.; 1911, 94c.; 1913, 94c.; 1918, January, $8.

(F.o.b. mines)

	Per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$47.30	$47.30	$47.30	$47.30
February	47.30	47.30	47.30	47.30
March	47.30	47.30	47.30	47.30
April	47.30	47.30	47.30	47.30
May	47.30	47.30	47.30	47.30
June	47.30	47.30	47.30	47.30
July	47.30	47.30	47.30	47.30
August	47.30	47.30	47.30	47.30
September	47.30	47.30	47.30	47.30
October	47.30	47.30	47.30	47.30
November	47.30	47.30	47.30	47.30
December	47.30	47.30	47.30	47.30
Year	47.30	47.30	47.30	47.30

Pyrites and Sulphur

Pyrites

January 2, 1905, the price was 10c. to 11c. per unit ton; October 18, 1911, 10c. to 10½c.; 1913, 10½c. to 11c.; 1917, December, 25c.

	Per unit ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.12	$0.12	$0.13	$0.13
February	.12	.12	.13	.13
March	.13	.12	.13	.13
April	.13	.13	.13	.13
May	.13	.13	.13	.13
June	.13	.13	.13	.13
July	.13	.13	.13	.13
August	.13	.13	.13	.13
September	.13	.13	.13	.13
October	.13	.13	.13	.13
November	.13	.13	.13	.13
December	.13	.13	.13	.13
Year	.13	.12	.13	.13

Sulphur

(Crude Brimstone)

(F.o.b. mines, in bulk)

	Per ton 1927. H.	1927. L.	1928. H.	1928. L.
January	$18.00	$18.00	$18.00	$18.00
February	18.00	18.00	18.00	18.00
March	18.00	18.00	18.00	18.00
April	18.00	18.00	18.00	18.00
May	18.00	18.00	18.00	18.00
June	18.00	18.00	18.00	18.00
July	18.00	18.00	18.00	18.00
August	18.00	18.00	18.00	18.00
September	18.00	18.00	18.00	18.00
October	18.00	18.00	18.00	18.00
November	18.00	18.00	18.00	18.00
December	18.00	18.00	18.00	18.00
Year	18.00	18.00	18.00	18.00

Fertilizer Output in 1927

According to data collected at the 1927 biennial census of manufactures, establishments engaged primarily in the manufacture of fertilizers reported products valued at $190,384,890, of which amount $165,272,337 was contributed by fertilizers, $10,284,513 by fertilizer materials sold in condition in which purchased, and $14,828,040 by other products, such as chemicals, bone black, oils, poultry food, etc. The total production shows a decrease of 7.9 percent in value as compared with $206,772,904 for 1925, the last preceding census year.

The items which make up the total of $165,272,337 for fertilizers made in 1927 are as follows:—Complete fertilizers, 4,956,843 tons, valued at $123,412,719; ammoniated fertilizers, 74,812 tons, valued at $1,930,596; superphosphates, including concentrated phosphates, for sale, 2,396,549 tons, valued at $29,673,922; potash acid phosphate, 243,499 tons, valued at $5,464,885; bone meal, 20,721 tons, valued at $771,750; fish scrap, 38,304 tons, valued at $1,767,981; other fertilizers, 120,254 tons, valued at $2,250,484.

Of the 621 establishments reporting for 1927, 114 were located in Georgia, 84 in North Carolina, 55 in Alabama, 49 in South Carolina, 45 in Maryland, 44 in Virginia, 25 in Pennsylvania, 24 in Florida, 23 in Ohio, 20 in New Jersey, 16 in California, 13 in Illinois, 12 in Indiana, 11 in Louisiana, 11 in Mississippi and the remaining 75 in 19 other States. Of the 587 establishments which reported production in 1925, 23 went out of business prior to 1927, 15 were idle throughout the year and 7 reported commodities other than fertilizers as their principal products and were, therefore, transferred to the appropriate industries. The manufacture of fertilizers as their principal products was reported by 79 establishments for the first time at the present census.

Detailed figures follow:—

	1927.	1925.
Number of establishments	621	587
Wage earners (average for the year)*	18,612	19,644
Wages	$17,619,661	$17,743,327
Cost of materials, supplies, containers for products, fuel and purchased power, total	$138,142,925	$137,808,185
Materials, supplies and containers	$135,368,365	†
Fuel and power	$2,774,560	†
Products, total value	$190,384,890	$206,772,904
Fertilizers, value	$165,272,337	$187,003,635
Fertilizer materials sold in condition in which purchased (merchandising), value	$10,284,513	$19,769,269
All other products, value	$14,828,040	.....
Value added by manufacture	$52,241,965	$68,964,719
Horsepower	156,274	152,193

* Not including salaried employees.
† Not reported separately.

Output by Kind, Quantity and Value

	1927.	1925.
Total tons	*	8,229,032
Total value	*	$195,040,157
Produced in fertilizer industry:—		
Tons	7,850,982	†
Value	$165,272,337	$187,003,635
Secondary products of other industries:—		
Tons	*	†
Value	*	$8,036,522
Complete fertilizers:—		
Number of establishments	562	†
Tons	4,956,843	4,925,948
Value	$123,412,719	$143,326,670
Ammoniated fertilizers:—		
Number of establishments	183	†
Tons	74,812	131,703
Value	$1,930,596	$3,278,846
Superphosphates, including concentrated phosphates:—		
Production for sale:—		
Number of establishments	183	†
Tons	2,396,549	2,638,761
Value	$29,673,922	$35,180,160
Made and consumed—		
Number of establishments	170	†
Tons	‡1,732,008	‡1,457,681
Fish scrap:—		
Number of establishments	35	†
Tons	38,304	72,123
Value	$1,767,981	$2,927,927
Potash acid phosphate:—		
Number of establishments	269	†
Tons	243,499	247,541
Value	$5,464,885	$6,159,388
Bone meal:—		
Number of establishments	50	†
Tons	20,721	48,282
Value	$771,750	$1,622,204
Other fertilizers:—		
Number of establishments	56	†
Tons	120,254	165,674
Value	$2,250,484	$2,544,902

* Not yet available.
† Not tabulated separately.
‡ Not included in total.

Potash Compounds Output in 1927

According to data collected at the 1927 biennial census of manufactures, potassium compounds to the aggregate value of $9,228,337 were made in the United States, this being an increase of 52 percent as compared with $6,071,146 for 1925, and an increase of 46 percent as compared with $6,318,822 for 1923. The chief products of this group in 1927 were potassium bitartrate (cream of tartar), with a production of 7,283,977 pounds, valued at $1,669,893, and potassium iodide, with a production of 528,017 pounds, valued at $1,896,944.

The statistics for 1927 and 1925 are summarized in the following table:—

	Year.	Number of establishments.	Quantity (pounds)	Value.
Aggregate value	1927	..	.....	$9,228,337
	1925	..	.....	6,071,146
Potassium:—				
Acetate	1927	4	74,119	20,879
	1925	4	81,043	19,220
Bitartrate (cream of tartar)	1927	5	7,283,977	1,669,893
	1925	5	7,072,651	1,472,082
Citrate	1927	5	117,297	66,609
	1925	7	147,399	83,540
Iodide	1927	7	528,017	1,896,944
	1925	7	494,935	1,821,259
Other potassium salts, total value	1927	..	.....	5,574,812
	1925	..	.....	2,675,045
Inorganic	1927	..	.....	*4,710,856
	1925	..	.....	2,345,849
Organic	1927	..	.....	*809,661
	1925	..	.....	329,196
Not specified as to kind	1927	..	.....	54,295

* Principal salts named in order of value:—Inorganic—chloride, 4 establishments; hydroxide, 3; carbonate, 2; bichromate, 3; bromide, 2; nitrate, 3; permanganate, 1; phosphate, 2; bromate, 1; perchlorate, 1; hypophosphite, 1. Organic—xanthate, 3; rochelle salts, 3; tartar emetic, 3; glycerophosphate, 2.

Necrological Record, 1928

The following list comprises the names of persons connected with the various industries in the field of the Oil, Paint and Drug Reporter, who died during 1928. Age, date of death, line of business, and the date of publication of the obituary notice are also given:—

	Age.	Date of death.	Line of business.	Date of publication.
Abadie, Daniel L.	62	April 21	Wholesale druggist	April 30
Alexander, G. S.	53	Jan. 31	Fertilizers	Feb. 6
Amundson, William	54	April 14	Pharmaceuticals	May 7
Barry, John T.	62	Mar. 5	Manufacturing chemist	Mar. 12
Betts, Dr. William R.	64	Oct. 31	Wholesale drugs	Nov. 5
Blagden, William G.	89	Nov. 17	Chemicals	Dec. 10
Born, Philip A.	46	Nov. 19	Chemicals	Nov. 26
Brandreth, Franklin	78	Mar. 25	Surgical supplies	April 2
Brigham, Samuel F.	55	Aug. 11	Varnish	Aug. 20
Brown, Charles William	69	Mar. 6	Paint manufacturer	Mar. 12
Burgoyne, Charles L.	74	Feb. 27	Candles	Mar. 5
Caffrey, E. T.	50	Nov. 15	Petroleum	Nov. 19
Campbell, Michael J.	68	July 17	Custom house employee	July 30
Carnrick, George W.	77	Dec. 25	Glandular products	Dec. 31
Carrell, Horace G.	55	May 17	Chemicals	May 21
Chamberlin, C. D.	..	Oct. 24	Petroleum attorney	Oct. 29
Chamberlin, Prof. T. C.	85	Nov. 15	Chemistry teacher	Nov. 26
Chapin, Arthur B.	43	July 1	Paints	July 16
Chappell, Henry W.	71	June 13	Chemicals	June 18
Childs, William H.	71	Nov. 2	Chemicals	Nov. 5
Clark, Charles Allen	37	Jan. 27	Paint trade publisher	Jan. 30
Clark, M. T.	54	April 1	Paint manufacturer	April 16
Clark, Noah F.	73	Feb. 15	Petroleum	Feb. 27
Clough, Richard W.	67	April 15	Varnish	April 30
Cole, Howard N.	54	May 4	Petroleum	May 7
Collins, James J.	56	April 28	Chemicals	May 14
Confer, A. L.	85	Dec. 28	Petroleum	Dec. 31
Connor, Thomas W.	64	Aug. 23	Colors	Sept. 10
Cook, Charles	..	Mar. 15	Wholesale druggist	Mar. 19
Cordes, William	**54**	**Feb. 1**	Toothbrushes	Feb. 6
Coulter, Dr. John M.	77	Dec. 23	Botanist	Dec. 31
Cowing, George Arthur	48	Mar. 13	Oil renderer	Mar. 19
Cox, Dr. John W.	73	Aug. 26	Proprietary medicines	Sept. 3
Culbertson, A. E.	72	May 3	Petroleum geologist	May 7
DeVilbiss, Thomas	50	Nov. 9	Paint spray equipment	Nov. 12
Devine, J. F.	63	Oct. 28	Paint making machinery	Nov. 5
Dewar, John	..	April 20	Master painter	April 23
Duggan, Edward J.	..	June 28	Drugs and chemicals	July 2
Dulaney, Henry S.	79	July 8	Proprietary medicines	July 16
Du Pont, William	73	Jan. 20	Powder manufacturer	Jan. 23
Egan, Robert W.	53	Dec. 15	Petroleum publisher	Dec. 24
Eger, Maurice D.	81	June 8	Paints	June 25
Elms, James W.	43	Oct. 18	Paints	Oct. 29
Farrand, Jacob S., Jr.	71	Dec. 19	Wholesale druggist	Jan. 7
Ferguson, William	55	Feb. 1	Chemicals	Feb. 13
Flynt, William S.	77	May 29	Paint manufacturer	June 4
Foster, Edward A.	45	Aug. 26	Stains	Sept. 3
Foster, Orrin E.	88	Dec. 29	Proprietary medicines	Jan. 7
Franchot, Douglas W.	47	Sept. 23	Petroleum	Oct. 1
Freas, Prof. Thomas B.	59	Mar. 15	Chemistry teacher	Mar. 19
Fuller, Frank W.	54	April 16	Drugs and paints	April 30
Gates, James H.	63	Sept. 28	Paints	Oct. 15
Geiler, Frank	33	July 21	Paint distributor	July 23
Gibbons, William M.	72	June 13	Naval stores	June 25
Gilchrist, William	77	Feb. 2	Fertilizers	Feb. 6
Glick, Bernard N.	38	Nov. 5	Chemicals	Nov. 12
Goodall, H. R.	53	Dec. 1	Wholesale druggist	Dec. 10
Gosborn, Albin Oliver	90	Feb. 4	Paints	Feb. 13
Grace, James W.	57	Mar. 1	Soda nitrate importer	Mar. 12
Griffiths, Kenneth F., Jr.	42	Jan. 22	Wax importer	Jan. 30
Grimm, Daniel	90	June 1	Petroleum	June 11
Gundelfinger, W. G.	47	Mar. 18	Alkalies	April 2
Hanna, Walter S.	71	Nov. 3	Paints	Nov. 19
Hardesty, J. C.	55	Nov. 9	Extracts	Nov. 19
Hare, C. F. A.	47	Oct. 20	Paints	Nov. 5
Hare, Ralph G.	48	Nov. 18	Petroleum	Nov. 26
Harvey, George F.	85	April 24	Drugs	April 30
Haynie, J. W.	65	Oct. 29	Pharmaceutical manufacturer	Nov. 5
Haywood, Dr. J. K.	54	Nov. 30	Insecticide chemist	Dec. 10
Hickman, John C.	59	Nov. 8	Wholesale druggist	Dec. 17
Hillman, Fred H.	66	Sept. 10	Petroleum	Sept. 17
Hills, Charles F.	83	Aug. 30	Linseed crusher	Sept. 10
Hochschild, Berthold	68	Jan. 24	Metals	Jan. 30
Holmes, Henry E.	79	Oct. 26	Wholesale druggist	Nov. 12
Horne, Dr. John	80	May 30	Geologist	June 4
Houghton, Arthur A.	61	April 19	Glass	April 23
Hubbell, Russell H.	49	Nov. 4	Paint manufacturer	Nov. 12
Hudnut, Richard A.	72	Oct. 30	Perfume manufacturer	Nov. 5
Hurley, Francis E.	51	July 27	Petroleum	Aug. 6
Iliff, Ellsworth E.	57	Nov. 29	Chemicals	Dec. 10
James, Dr. Charles	..	Dec. 11	Chemistry teacher	Dec. 17
Jamieson, Thomas N.	80	Dec. 19	Pharmacist	Dec. 24
Jennings, Arthur S.	68	Mar. 13	Paint editor	April 9
Jennings, Sidney J.	65	Nov. 17	Metals	Nov. 26
Johnson, Herbert F.	60	Feb. 15	Waxes	Mar. 5
Jones, George H.	56	Nov. 22	Petroleum	Nov. 26
Keefe, John A.	58	Nov. 9	Linseed oil salesman	Nov. 19
Knox, James W.	82	Dec. 7	Chemicals	Dec. 17
Lilly, James E.	84	Jan. 31	Pharmaceuticals	Feb. 6
Lyne, Lewis Frederick	80	April 17	Soap engineer	April 23
McBride, R. O.	64	Sept. 30	Drugs	Oct. 15
McClusky, Clarence W.	52	Oct. 7	Linseed oil	Oct. 22
Mallinckrodt, Edward	83	Feb. 1	Chemical manufacturer	Feb. 13
Martin, F. W. E.	53	Nov. 1	Cotton oil	Nov. 5
Mauran, Max	60	April 2	Alkalies	April 9
Mayo, Dr. Caswell A.	65	Jan. 13	Drug editor	Jan. 16
Meehan, Charles R.	66	May 9	Essential oils	May 14
Mersereau, William T. R.	68	Mar. 1	Wholesale druggist	Mar. 5
Merz, Carl	71	Sept. 1	Dyestuffs	Sept. 10
Morton, Dr. John W.	78	May 13	Wholesale druggist	May 28
Motte, J. Ward	57	July 11	Naval stores	July 23
Nellis, Edward G.	49	June 26	Chemical publisher	July 2
Nichols, William H., Jr.	54	May 26	Chemicals	June 4
Noguchi, Dr. Hideyo	..	May 21	Bacteriologist	May 28
O'Brien, William D.	56	May 2	Varnish manufacturer	May 7
Onion, Leonard W.	59	Oct. 19	Paints	Nov. 12
Pape, Harry W.	52	Nov. 20	Proprietary medicines	Nov. 26
Park, William W.	58	Feb. 28	Wholesale druggist	Mar. 5
Parker, Arthur D.	56	May 11	Wholesale druggist	May 14
Perkin, Dr. Frederick M.	58	May 24	Chemist	June 25
Pickens, William W.	58	Dec. 25	Fertilizer	Dec. 31
Pope, Prof. Thomas E.	80	Oct. 30	Chemistry teacher	Nov. 5
Pratt, George C.	..	Sept. 7	Pharmaceutical manufacturer	Oct. 1
Prescott, William	79	Dec. 30	Fertilizers	Jan. 7
Preston, Homer M.	67	April 2	Petroleum	April 9
Richard, Prof. Theodore W.	60	April 2	Chemistry teacher	April 9
Rigney, P. Samuel	56	Oct. 23	Chemicals	Oct. 29
Rockwood, Charles H.	..	June 12	Paints	June 25
Roth, Martin A.	38	Sept. 19	Pharmaceuticals	Sept. 24
Rowles, Walter D.	50	Jan. 17	Pharmaceuticals	Jan. 23
Royster, F. S.	78	Mar. 1	Fertilizer	Mar. 5
Salisbury, Charles A.	70	Oct. 4	Petroleum	Oct. 8
Schwerin, Lorenz R.	59	Nov. 14	Casein	Nov. 19
Seep, Joseph	89	April 1	Petroleum	April 9
Sheffield, George S.	69	Oct. 3	Paints	Oct. 8
Sherrill, Howard W.	40	Nov. 5	Chemicals	Nov. 12
Shoemaker, Clayton F.	..	Sept. 12	Wholesale druggist	Sept. 17
Sinclair, Edmund E.	56	Feb. 4	Ink manufacturer	Mar. 5
Sloan, Francis H.	76	Jan. 13	Botanicals	Jan. 16
Smith, Dr. Edgar Fahs	72	May 3	Chemistry teacher	May 7
Smith, Edwin H.	58	Nov. 12	Linseed oil	Nov. 19
Smith, Orison B.	81	Mar. 14	Dry colors	April 2
Sochocky, Dr. Sabin	46	Nov. 14	Radium chemist	Nov. 19
Sommers, Elmer E.	60	June 28	Petroleum	July 9
Spann, W. R.	..	April 4	Cotton oil	April 30
Stoer, J. Jacob	..	June 2	Paints	June 18
Stopford, William A.	60	Oct. 30	Glycerin	Nov. 5
Storts, William A.	55	Aug. 27	Cotton oil	Sept. 3
Stowell, Dr. Charles H.	78	Sept. 17	Proprietary medicines	Sept. 24
Strasenburgh, Robert J.	64	Mar. 22	Manufacturing chemist	April 2
Tainter, Louis Swift	43	Feb. 2	Petroleum broker	Feb. 6
Talcott, Charles H.	58	Nov. 2	Wholesale druggist	Nov. 12
Taylor, Edgar D.	90	Jan. 27	Wholesale druggist	Jan. 30
Taylor, Eugene M.	63	**Dec. 28**	**Heavy chemicals**	Jan. 7
Thibaut, John F.	60	Feb. 12	Varnish manufacturer	Feb. 20
Tinling, Charles W.	64	Mar. 12	Drug manufacturer	Mar. 26
Todd, John Warner	75	April 20	Cotton oil	April 30
Tomlinson, C. N. W.	30	Mar. 26	Paints	April 16
Wadsworth, John	86	May 22	Paints	June 18
Wallace, H. Walker	56	June 22	Fertilizers	July 2
Wernicke, Carl	..	Dec. 23	Naval stores	Jan. 7
Wood, Edward W.	83	Sept. 30	Manufacturing druggist	Oct. 8
Wood, Franklin D.	78	April 14	Petroleum	April 30
Young, William B.	81	Aug. 5	Wholesale druggist	Aug. 20

Fish Oils Prices

(Continued from page 97)

Whale Oil, Crude No. 1

(F.o.b. Pacific Coast)

October 18, 1871, the price was 56c. to 57c.; 1881, nominal; 1891, nominal; 1901, nominal; 1911, nominal; 1913, nominal; 1918, August, $1.35.

(In sellers' tanks)

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.08	$0.08	$0.07¼	$0.07¼
February	.08	.08	.07¼	.07¼
March	.08	.08	.07¼	.07¼
April	.08	.08	.07¼	.07¼
May	.07½	.07½	.07¼	.07¼
June	.07½	.07½	.07¼	.07¼
July	.07½	.07¼	.07¼	.07¼
August	.07¼	.07¼	.07¼	.07¼
September	.07¼	.07¼	.07¼	.07¼
October	.07¼	.07¼	.07¼	.07¼
November	.07¼	.07¼	.07¼	.07¼
December	.07¼	.07¼	.07¼	.07¼
Year	.08	.07¼	.07¼	.07¼

Whale Oil, Bleached Winter

October 18, 1871, the price was 65c. to 68c.; 1881, 54c.; 1891, 58c. to 59c.; 1901, 46c. to 48c.; 1911, 52c. to 54c.; 1913, 50c. to 51c.; 1918, January, $1.50.

(In barrels)

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.80	$0.80	$0.80	$0.80
February	.80	.80	.80	.80
March	.80	.80	.80	.80
April	.80	.80	.80	.80
May	.80	.80	.80	.80
June	.80	.80	.80	.80
July	.80	.80	.80	.80
August	.80	.80	.80	.80
September	.80	.80	.80	.80
October	.80	.80	.80	.80
November	.80	.80	.80	.80
December	.80	.80	.80	.80
Year	.80	.80	.80	.80

Whale Oil, Natural Winter

October 18, 1871, the price was 63c.; 1881, 50c. to 51c.; 1891, 56c.; 1901, 44c. to 46c.; 1911, 50c. to 52c.; 1913, 48c. to 49c.; 1918, September, $1.50.

(In barrels)

	Per gallon 1927. H.	1927. L.	1928. H.	1928. L.
January	$0.78	$0.78	$0.78	$0.78
February	.78	.78	.78	.78
March	.78	.78	.78	.78
April	.78	.78	.78	.78
May	.78	.78	.78	.78
June	.78	.78	.78	.78
July	.78	.78	.78	.78
August	.78	.78	.78	.78
September	.78	.78	.78	.78
October	.78	.78	.78	.78
November	.78	.78	.78	.78
December	.78	.78	.78	.78
Year	.78	.78	.78	.78

Mineral Output in 1928

The total value of mineral production in the United States in 1928 was approximately $5,400,000,000, according to the United States Bureau of Mines. This is a decrease of approximately 2 percent from 1927 and is due almost entirely to a decrease in the value of mineral fuels. The quantity and value of coal decreased; the quantity of petroleum produced changed little, but the value decreased, and the quantity and value of natural gas and natural gasoline increased as compared with 1927. The total value of metallic products shows an increase, due to an increase in the quantity and unit value of copper and an increase in the quantity of iron produced. Decreases were shown for gold, silver, lead and zinc. The total value of non-metallic mineral products shows approximately no change. Decreases for some of these products were offset by increases for others. Detailed figures follow:—

Metallic minerals	$1,260,000,000
Non-metallic, other than fuels	1,240,000,000
Mineral fuels	2,900,000,000
Totals	$5,400,000,000

Manganese Ore Shipments

Domestic shipments of manganese ore containing 35 percent and more of metallic manganese in 1928, totaled 45,000 long tons, valued at $1,197,000, according to preliminary figures compiled by the United States Bureau of Mines. The 1927 shipments amounted to 44,741 tons, valued at $1,151,918. The shipments of metallurgical ore amounted to 30,000 tons, valued at $561,000, while those of 1927 were 27,730 tons, valued at $446,781. The shipments of chemical ore in 1928 amounted to 15,000 tons, valued at $636,000, while those of 1927 were 17,011 tons, valued at $705,137.

U. S. Specification Indexed

specifications, has issued its revised which had promulgated, up to June 30, 1928, 578 government master alphabetical index and numerical list. This publication (circular No. 371 of the Bureau of Standards) also includes instructions for obtaining copies of the specifications, whose use is mandatory upon all government departments and establishments.

Many of the specifications are in printed form and must be purchased from the Superintendent of Documents, Government Printing Office, Washington. Mimeographed specifications are obtainable from the Federal Specifications Board, Washington.

This issue supersedes Bureau of Standards circular 319, dated January 1, 1928, under the same title.

The Federal Specifications Board,

Alcohol Output Values

According to data collected at the 1927 biennial census of manufactures, establishments engaged primarily in the manufacture of ethyl alcohol reported products valued at $33,971,150, as compared with $57,705,704 for 1925, the last preceding census year.

The products of this industry are pure grain (ethyl) alcohol, denatured alcohol and industrial alcohol.

Of the 28 establishments reporting for 1927, eight were located in Louisiana, three each in Massachusetts, New Jersey and Pennsylvania, two each in California, Illinois, Indiana and New York, and one each in Kentucky, Maryland, and Ohio. In 1925 the industry was represented by 31 establishments, the decrease to 28 in 1927 being the net result of a loss of four establishments and a gain of one establishment which reported production in 1927 but was idle in 1925. Of the four establishments lost to the industry, two were idle throughout the year, and two went out of business prior to 1927.

The statistics for 1927 and 1925 are summarized in the following table:—

	1927.	1925.
No. of establishments	28	31
Wage earners (average for the year)*	1,180	1,395
Wages	$1,704,518	$1,838,318
Cost of materials, factory supplies, fuel, and purchased power, total	$19,309,772	$38,564,481
Materials and supplies	$17,886,505	†
Fuel and power	$1,423,267	†
Value of products	$33,971,150	$57,705,704
Value added by manufacture	$14,661,378	$19,141,223
Horsepower	7,061	10,268

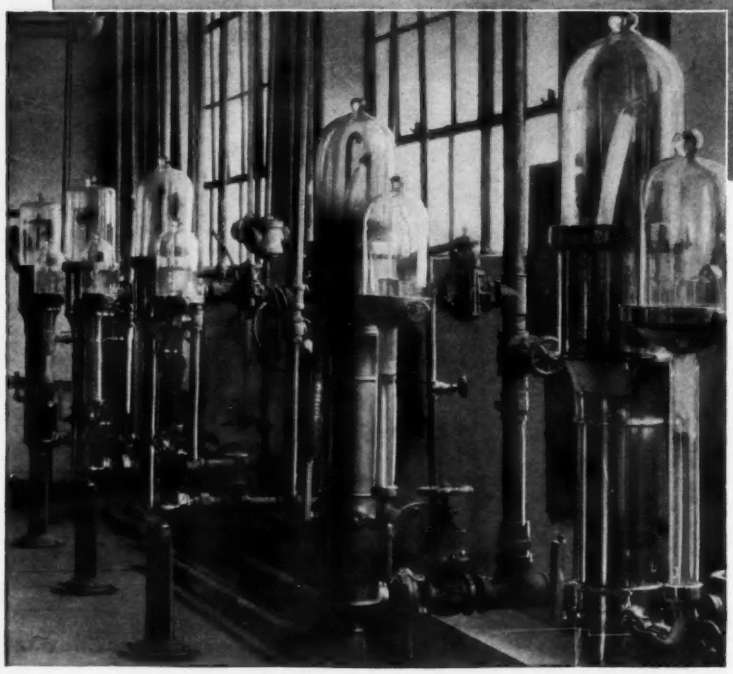
* Not including salaried employees.
† Not reported separately.

The Allgemeene Norit Maatschappy and Verein fur Chemische Industrie of Frankrut have concluded a final agreement in the matter of active carbon. The sale of active carbon remains with the Norit Vereeniging Centrale Verkoop at Amsterdam, which retains Carbon, Ltd., of Frankrut, as its agent in Germany and Switzerland.

Calcium chloride is gradually replacing salt in the brines used in the artificial ice industry, according to data collected by the Bureau of the Census. Consumption of calcium of chloride for this purpose was greater by 1,171,000 pounds in 1927 than in 1925; consumption of salt showed a decrease of 1,070,000 pounds.

Higher duties on certain products of an alcohol base imported into French Equatorial Africa (except Gaboon) have been established as follows:—Chemical products with an alcohol base, 20 percent ad valorem; alcoholic perfumeries, 40 percent; medical compounds with an alcohol base, 25 percent; common wine of more than 12 degree, 20 percent. Those products were formerly dutiable at 10 percent ad valorem.

The large sugar plant of the Dynamit-Nobel Company, Bratislava, is to be converted for the production of sulphuric acid. This plant was constructed in 1924 but as a result of the recent crisis in the Czechoslovak sugar industry was sold to the sugar cartel in July, 1928. Aktien-Gesellschaft Dynamit-Nobel of Bratislava is a Czechoslovak corporation controlled by the German company of the same name located in Hamburg which in turn is controlled by the I. G. Farbenindustrie.



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this association guarantee that they meet these exacting requirements.

The first article of the Code of Ethics of this Association is as follows:—

> 1. Every individual on entering The Association of Consulting Chemists and Chemical Engineers, and thereby becoming entitled to full professional membership, incurs an obligation to advance the science and art of chemistry, to guard and uphold its high standard of honor, and to conform to the principles of professional conduct.

From any member you can obtain a copy of the complete code to which all have subscribed.

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